# Ed Martin & associates, inc.

ThermoProbe

MMC

Gauging Supplies

Temperature

Testing

Calibration

Verification

Repairs

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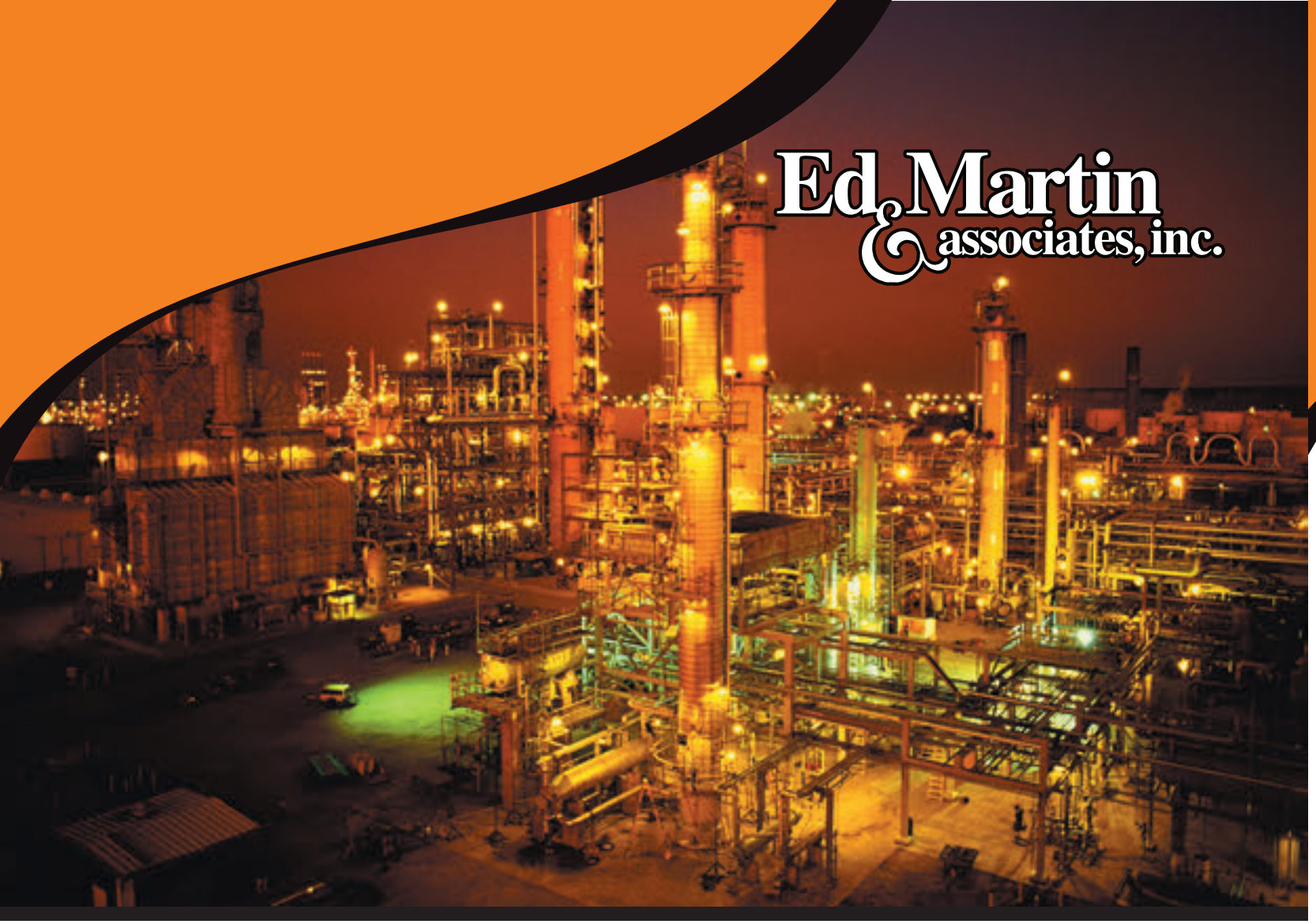


**Ed Martin & Associates, Inc.** is committed to providing our customers with the finest quality products and services which will provide accurate, repeatable and reliable data. Our customer service personnel stand ready to offer immediate pricing and availability information as well as application and technical assistance.

Dating back to 1975, our experience in supplying equipment to Laboratories, Terminals, Petrochemical Plants, Pipeline Facilities and others, allows us to be very much in touch with the specialized needs and requirements of the industry.

We understand that our customers depend on accurate and timely delivery of their products. As a stocking distributor for the leading manufacturers in the industry, our comprehensive stock allows us to quickly ship your order. Please notify us if you have an urgent need and we will do everything we can to meet your needs.

To our customers, we say "THANK YOU!" for your support. To those of you considering our products or services, we would like for you to know that we look forward to working with you in the future.

Ed Martin & associates, inc.


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ThermoProbe Inc.

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## PORTABLE GAUGING THERMOMETERS

| Part Number | Description | Part Number | Description |
|---|---|---|---|
| TP7C050SWSM | 50' Lead | TP9050SWSM | 50' Lead |
| TP7C050EWSM | 50' Lead Extra Weight | TP9050EWSM | 50' Lead Extra Weight |
| TP7C050AWNM | 50' Lead Asphalt Probe | TP9050AWNM | 50' Lead Asphalt Weight |
| TP7C075SWSM | 75' Lead | TP9075SWSM | 75' Lead |
| TP7C075EWSM | 75' Lead Extra Weight | TP9075EWSM | 75' Lead Extra Weight |
| TP7C075AWNM | 75' Lead Asphalt Probe | TP9075AWNM | 75' Lead Asphalt Weight |
| TP7C110SWSM | 110' Lead | TP9110SWSM | 110' Lead |
| TP7C110EWSM | 110' Lead Extra Weight | TP9110EWSM | 110' Lead Extra Weight |
| TP7C110AWNM | 110' Lead Asphalt Probe | TP9110AWNM | 110' Lead Asphalt Weight |

When ordering, please indicate cable length, sensor weight and desired cable markers. All items above are available in feet or meters.

## THERMOPROBE PORTABLE LABORATORY THERMOMETERS

| | |
|---|---|
| TL-1A-8 | Thermometer, 8" Sensor with 4 pt. Calibration |
| TL-1A-12 | Thermometer, 12" Sensor with 4 pt. Calibration |
| TL-1A-Custom | Custom Length 4" to 39" Sensor with 4 pt. Calibration |

| | |
|---|---|
| TL-1W--8 | Thermometer, 8" Sensor with 4 pt. Calibration |
| TL-1W-12 | Thermometer, 12" Sensor with 4 pt. Calibration |
| TL-1W-Custom | Custom Length 4" to 39" Sensor with 4 pt. Calibration |

| | |
|---|---|
| TL1-R-8 | Thermometer, 8" Sensor with 5 pt. Calibration |
| TL1-R-12 | Thermometer, 12" Sensor with 5 pt. Calibration |

| | |
|---|---|
| TL2-S | Precision Bench Top Thermometer - Single Sensor with 5 pt. Calibration |
| TL2D-S | Precision Bench Top Thermometer - Dual Sensor with 5 pt. Calibration |

ThermoProbe Inc.

## Petroleum Gauging Thermometer

# TP7-C

The TP7-C employs the proven RTD design that has been used in the TP 7 and TP 8 for many years. A sealed industrial quality overlay provides a user interface that is easy to use with gloves. A polypropylene blend enclosure protects the circuit board and large LCD from penetration by impact, water and reactive liquids.

The new TP 7-C circuit board is an evolutionary step up from our highly accurate, reliable and successful TL1 laboratory thermometer. The Power Button's primary function powers the instrument for intervals of about 20 minutes since the last button was accessed. The Power Button can also be used to conserve power and clear the memory, or to make adjustment while in calibration mode. A simple menu operation is displayed by holding the Function Button, and alternately functions to allow adjustments in the calibration mode. Arrows on the left side of the display show the direction of the temperature reading and whether stability has been reached. At the user's discretion stabilized temperatures can be logged at numerous liquid levels for a running average and later displayed for the user's documenting purposes. But this feature never interferes with simply getting an accurate temperature reading.

To endure the environment and be intrinsically safe, the TP7-C is manufactured of materials, which are both immune to petrochemicals and are non-sparking. The enclosure is made of a polypropylene blend. The probe assembly is constructed using non-stick cable and stainless steel sensor components.

Ed Martin & associates, inc.

## SPECIFICATIONS

| | |
|---|---|
| Maximum Dimensions: | 13.5 x 7.25 x 4.5 in.;<br>34.3 x 18.4 x 11.4 cm |
| Probe: | 304 Stainless Steel, Sealant, Aramid Fiber Reinforced, FEP or PFA<br>Cable Jacket, Coaxial Construction |
| Enclosure Material: | Polypropylene Blend, Stainless Steel and Aluminum |
| Batteries: | 2 AA Alkaline; Battery Life of approximately 200 hours<br>Battery manufacturer's battery operating temperatature range -4 to 130°F, -20 to 54°C<br>Note: Battery may not provide adequate power if ambient temperature is extremely low or high. |
| Temperature: | Resolution 0.01<br>Range: -40 to +400°F<br>-40 to +204°C<br>Calibrated Accuracy:<br>±0.2°F from 32 to 200°F<br>±0.5°F from 200 to 400°F<br>±0.1°C from 0 to 100°C<br>±0.3°C from 100 to 200°C<br>4 Point NIST Traceable Report of Test<br>Long-term drift not to exceed 0.05%/year<br>Meets API requirements |

Specifications subject to change

## OPERATIONAL ATTRIBUTES

Easily replaceable AA Batteries, provides an estimated *200 hours operation.

Circuit logic automatically indicates low battery condition, automatically shuts off after twenty minutes, shows temperature trend and stabilization, displays error codes for failure determination.

The low power backlight for night operation is photo sensor controlled for convenience and battery conservation.

In nighttime conditions the backlight illuminates the display.

Celsius or Fahrenheit units with C/F indication can be easily selected from the Function Button.

User Manual explains intuitive calibration procedure that can be done through the external faceplate buttons.

## TYPICAL APPLICATIONS

Custody Transfers, Inventory, Tank, Pipeline, Barge, Ship, Railcar, Tank Truck. (Recommended Operation: API 7, Intl. Safety Guide For Oil Tankers and Terminals.)

Other Applications: Proving Systems (API 4)

Materials: All petrochemicals, caustic, acid, alkalies, powders. Molasses, syrups, distilled spirits.

## CERTIFICATIONS

CE 0359

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II 2 (1) G Ex ib [ia] IIB T4
DEMKO 11 ATEX 1104891X
IECEx ULD 11.0008X

ThermoProbe Inc.

# Petroleum Gauging Thermometer

# TP9

Ed Martin & associates, inc.

The TP9 employs the proven RTD design that has been used in the TP7 and TP8 for many years. A sealed industrial quality overlay provides a user interface that is easy to use with gloves. A stainless steel enclosure protects the circuit board and large LCD from penetration by impact, water and reactive liquids.

The new TP9 circuit board is an evolutionary step up from our highly accurate, reliable and successful TL1 laboratory thermometer. The Power Button's primary function powers the instrument for intervals of about 20 minutes since the last button was accessed. The Power Button can also be used to conserve power and clear the memory, or to make adjustment while in calibration mode. A simple menu operation is displayed by holding the Function Button, and alternately functions to allow adjustments in the calibration mode. Arrows on the left side of the display show the direction of the temperature reading and whether stability has been reached. At the user's discretion stabilized temperatures can be logged at numerous liquid levels for a running average and later displayed for the user's documenting purposes. But this feature never interferes with simply getting an accurate temperature reading.

To endure the environment and be intrinsically safe, the TP9 is manufactured of materials, which are both immune to petrochemicals and are non-sparking. The enclosure is made of stainless steel. The probe assembly is constructed using non-stick cable and stainless steel sensor components.

## SPECIFICATIONS

| | |
|---|---|
| Maximum Dimensions: | 10"L x 4.25"H x 6.4"W |
| Probe: | 304 Stainless Steel, Sealant, Aramid Fiber Reinforced, FEP or PFA Cable Jacket, Coaxial Construction |
| Enclosure Material: | Stainless Steel Acetal (Delrin) Probe Holder Polyvinylchloride Faceplate Stainless Steel Fasteners |
| Batteries: | 2 AA Alkaline; Battery Life of approximately 200 hours Battery manufacturer's battery operating temperatature range -4 to 130°F, -20 to 54°C Note: Battery may not provide adequate power if ambient temperature is extremely low or high. |
| Temperature: | Resolution 0.01 Range: -40 to +400°F -40 to +204°C Calibrated Accuracy: ±0.2°F from 32 to 200°F ±0.5°F from 200 to 400°F ±0.1°C from 0 to 100°C ±0.3°C from 100 to 200°C 4 Point NIST Traceable Report of Test Long-term drift not to exceed 0.05%/year Meets API requirements |

Specifications subject to change

## OPERATIONAL ATTRIBUTES

Easily replaceable AA Batteries, provides an estimated *200 hours operation.

Circuit logic automatically indicates low battery condition, automatically shuts off after twenty minutes, shows temperature trend and stabilization, displays error codes for failure determination.

The low power backlight for night operation is photo sensor controlled for convenience and battery conservation.

In nighttime conditions the backlight illuminates the display.

Celsius or Fahrenheit units with C/F indication can be easily selected from the Function Button.

User Manual explains intuitive calibration procedure that can be done through the external faceplate buttons.

## TYPICAL APPLICATIONS

Custody Transfers, Inventory, Tank, Pipeline, Barge, Ship, Railcar, Tank Truck. (Recommended Operation: API 7, Intl. Safety Guide For Oil Tankers and Terminals.)

Other Applications: Proving Systems (API 4)

Materials: All petrochemicals, caustic, acid, alkalies, powders. Molasses, syrups, distilled spirits.

## CERTIFICATIONS

CE 0359

Ex

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DEMKO 11 ATEX 1104891X
IECEx ULD 11.0008X

ThermoProbe Inc.

## Laboratory Thermometer

# TL1-A

Ed Martin & associates, inc.

The TL1-A intrinsically safe thermometer is intended to be used anywhere a precision glass stem thermometer or other type thermometer may be used.

The TL1-A is an improved version of the original ThermoProbe model TL1. The TL1-A incorporates glass thermometer simplicity and reliability with the ease of a digital display. Like precision mercury thermometers, the TL1-A has accuracy, repeatability and long-term stability. But unlike those thermometers there will never be problems with mercury separation or hazardous material cleanup. Different from most electronic thermometers, the "Cordless" TL1-A has no wires to get in the way or break. Battery replacement is easily done through a sealed cover. Encoded calibration is unaffected by temperature, vibration, or battery removal. Low battery display, and failure mode indications protect the user from false data.

4 Point NIST Traceable Calibration and a one year warranty included.

### FEATURES

- Auto-off after 20 minutes to save battery life
- Minimum Reading
- Maximum Reading
- Averaging
- Easy °F to °C switching
- Display arrows indicate increasing or decreasing temperature activity

### ON/OFF BUTTON

- On / Off
- Disable Auto-Off

### FUNCTION BUTTON

Used to access the following operations:

- Min
- Max
- Average
- °F < - >°C
- Resolution

## SPECIFICATIONS

| | |
|---|---|
| Display: | LCD with 0.25 inch characters<br>Trend Indicating Arrows<br>Low Battery & Fault indication |
| User Functions: | Auto Off after 20 minutes or continuous operation<br>Lowest Reading, Highest Reading, Average Reading<br>Switchable in Units of °F or °C<br>Display tenths or hundredths resolution |
| Construction: | Stainless Steel temperature sensor;<br>Standard Sensor length 8" (20cm)<br>Standard diameter 1/4" (6.35mm) with reduced diameter tip of 3/16" (4.76mm)<br>Sensor mount acetyl plastic<br>Electronics and display in 3.5" x 1.2" anodized Aluminum enclosure<br>Molded Silicone seal.<br>Highly durable display window, graphics and membrane switches. |
| Weight: | 3 ounces, 93 grams |
| Temperature: | Resolution 0.01 Degrees<br>Calibrated Accuracy:<br>±0.1°F from 14 to 320°F<br>±0.06°C from -10 to 160°C<br>NIST Traceable Report of Test |
| Temperature Time Constant: | 8 seconds in circulated water bath<br>(63.2% response to temperature change) |
| Electronics: | Ultra Low Power Microcontroller<br>FLASH Memory<br>20 bit A/D Converter<br>Recommended Ambient Temperature Range for Best Accuracy 32 to 112 °F, 0 to 44°C |
| Sensor: | 100 Ohm, Class A 1/3 DIN RTD<br>Immersion depth 4", 11cm |
| Battery: | 20mm Coin Size 3V Lithium,<br>Duracell DL2032(IEC CR2032)<br>Over 100 hours Service Life at 70°F, 21°C<br>Battery Operating Range -4 to 130°F, -20 to 54°C<br>Note: Battery may not provide adequate power if ambient temperature is below -4°F, -20°C or above 130°F, 54°C |

Specifications subject to change

## TYPICAL APPLICATIONS

Distillations, temperature baths, melting point tests, flash point tests, reference, thermowells, provers, temperature calibration for flow meters.

Industries: Laboratory
Petroleum
Pipeline
Pharmaceutical
Food

## CERTIFICATIONS

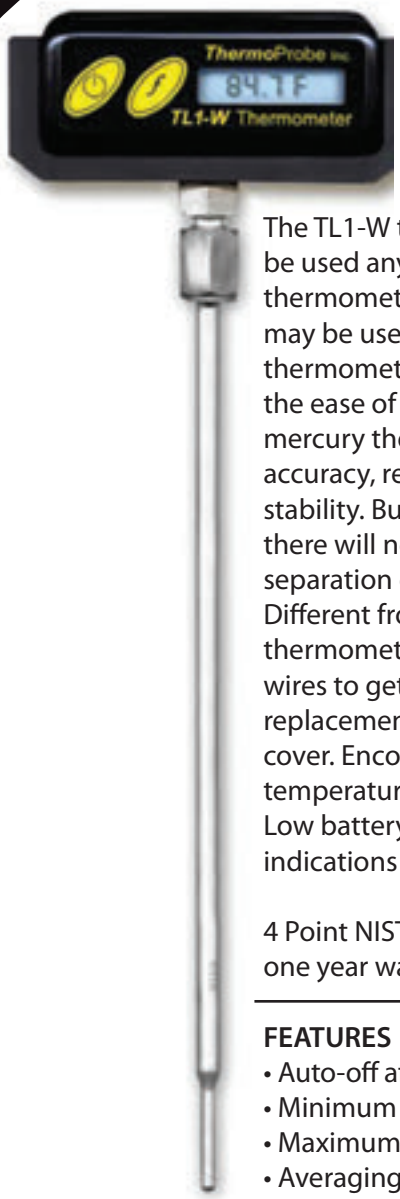
CE 0359

Ex II 2 G Ex ib IIC T4
DEMKO 11 ATEX CO09993X
IECEx ULD 11.0009X

ThermoProbe Inc.

# Laboratory Thermometer

# TL1-W




The TL1-W intrinsically safe thermometer is a modified field version of our successful TL1-A thermometer. It features a rugged frame for reinforcement and is designed for continuous operation, but can be easily powered off if desired.

The TL1-W thermometer is intended to be used anywhere a precision glass stem thermometer or other type thermometer may be used. The TL-1W incorporates glass thermometer simplicity and reliability with the ease of a digital display. Like precision mercury thermometers, the TL1-W has accuracy, repeatability and long-term stability. But unlike those thermometers there will never be problems with mercury separation or hazardous material cleanup. Different from most precision electronic thermometers, the "cordless" TL1-W has no wires to get in the way or break. Battery replacement is easily done through a sealed cover. Encoded calibration is unaffected by temperature, vibration or battery removal. Low battery display, and failure mode indications protect the user from false data.

4 Point NIST Traceable Calibration and a one year warranty included.

## FEATURES

- Auto-off after 20 minutes to save battery life
- Minimum Reading
- Maximum Reading
- Averaging
- Easy °F to °C switching
- Display arrows indicate increasing or decreasing temperature activity

### ON/OFF BUTTON

- On / Off
- Backlight
- Continuous Operation

### FUNCTION BUTTON

Used to access the following operations:

- Min
- Max
- Average
- °F < - >°C
- Resolution

Ed Martin & associates, inc.

## SPECIFICATIONS

| | |
|---|---|
| Display: | LCD with 0.25 inch characters<br>Trend Indicating Arrows<br>Low Battery & Fault indication |
| User Functions: | Auto-off after 20 minutes or continuous operation<br>Lowest Reading, Highest Reading, Average Reading<br>Switchable in Units of °F or °C<br>Display tenths or hundredths resolution |
| Construction: | Stainless steel temperature sensor; Standard<br>Sensor length 8" (20cm)<br>Standard diameter 1/4" (6.35mm) with<br>reduced diameter tip of 3/16" (4.76mm)<br>Sturdy Acetal frame surrounding aluminum enclosure<br>Electronics and display in 3.5" x 1.2"<br>anodized Aluminum enclosure<br>Molded Silicone seal.<br>Highly durable display window,<br>graphics and membrane switches. |
| Weight: | 6.5 ounces, 180 grams |
| Temperature: | Resolution 0.01 Degrees<br>Calibrated Accuracy:<br>±0.1°F from 14 to 320°F<br>±0.06°C from -10 to 160°C<br>NIST Traceable Report of Test |
| Temperature Time Constant: | 8 seconds in circulated water bath<br>(63.2% response to temperature change) |
| Electronics: | Ultra Low Power Microcontroller<br>FLASH Memory<br>20 bit A/D Converter<br>Recommended Ambient Temperature Range<br>for Best Accuracy 32° to 112°F, 0° to 44°C |
| Sensor: | 100 Ohm, Class A 1/3 DIN RTD<br>Immersion depth 4", 11cm |
| Battery: | 2 AAA Alkaline; Duracell MN2400<br>Battery Life several hundred hours<br>depending on backlight usage<br>Battery Operating Range -4 to 130°F, -20 to 54°C<br>Note: Battery may not provide adequate power if<br>ambient temperature is below -4°F, -20°C or above<br>130°F, 54°C |

Specifications subject to change

## TYPICAL APPLICATIONS

Distillations, temperature baths, melting point tests, flash point tests, reference, thermowells, provers, temperature calibration for flow meters.

Industries: Laboratory
Petroleum
Pipeline
Pharmaceutical
Food

## CERTIFICATIONS

CE 0359

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IECEx ULD 11.0009X

ThermoProbe Inc.

## Laboratory Thermometer

# TL1-R

Ed Martin & associates, inc.

The TL1-R thermometer is a compact reference thermometer with accuracy comparable to instrument systems costing twice as much. It has all the features of our standard TL1-A plus a higher level of accuracy.
It can be used in applications where extreme accuracy is required. The TL1-R is also perfect for metrology applications and as a calibration reference thermometer. It is an extremely accurate portable hand held instrument that is ideally suited for field applications and indoor laboratory uses.

The TL1-R uses a precision, 200 Ohm wire wound platinum resistance temperature sensor and attains its high accuracy through our proprietary calibration algorithm.

Standard 5-point Calibration Report, Nominal Points -4°, 32°, 120°, 200°, and 300°F. Report is also available in equivalent °C temperatures.

**ON/OFF BUTTON**
- On / Off
- Disable Auto-Off

**FUNCTION BUTTON**
Used to access the following operations:
- Min
- Max
- Average
- °F < - >°C
- Resolution

## SPECIFICATIONS

| | |
|---|---|
| Display: | LCD with 0.25 inch characters<br>Trend Indicating Arrows<br>Low Battery & Fault indication |
| User Functions: | Auto Off after 20 minutes or continuous operation<br>Lowest Reading, Highest Reading, Average Reading<br>Switchable in Units of °F or °C<br>Display hundredths or thousandths resolution |
| Construction: | Stainless Steel temperature sensor;<br>Standard Sensor length 8" (20cm)<br>Standard diameter 1/4" (6.35mm)<br>Sensor mount acetyl plastic<br>Electronics and display in 3.5" x 1.2"<br>anodized Aluminum enclosure<br>Molded Silicone seal.<br>Highly durable display window, graphics and membrane switches. |
| Weight: | 4 ounces, 124 grams |
| Temperature: | Resolution 0.001 Degrees<br>Standard Calibrated Range:<br>-4 to 300F, -20 to 150C<br>Tolerance: ±0.07°F ±0.04°C<br>NIST Traceable Report of Test |
| Temperature Time Constant: | 19 seconds in circulated water bath<br>(63.2% response to temperature change) |
| Electronics: | Microcontroller and precision 20-bit A/D converter, FLASH Memory<br>Recommended Ambient Temperature Range for Best Accuracy 32 to 112 °F, 0 to 44°C |
| Sensor: | 200 Ohm, Wire-wound Platinum RTD<br>Immersion depth 4", 11cm |
| Battery: | 2 AAA Alkaline; Duracell MX2400<br>Over 200 hours Service Life at 70°F, 21°C<br>Battery Operating Range -4 to 130°F, -20 to 54°C<br>Note: Battery may not provide adequate power if ambient temperature is below -4°F, -20°C or above 130°F, 54°C |

Specifications subject to change

## TYPICAL APPLICATIONS

Distillations, temperature baths, melting point tests, flash point tests, reference, thermowells, provers, temperature calibration for coriolis flow meters.

## CERTIFICATIONS

CE Ex II 2 G Ex ib IIC T4
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IECEx ULD 11.0009X

ThermoProbe Inc.

## Laboratory Thermometer

# TL2

The TL2 is a 2-channel precision bench top thermometer offering a higher level of metrology accuracy in a very affordable package. The TL2 is a complete NIST traceable system that is ready to use, right out of the box. Based on successful TL1-R technology, the TL2 has been developed for laboratory applications demanding high precision reference thermometry with the added versatility of 2 channel measurement. To fully realize the benefits of 2 channel measurement, the TL2 provides data logging capabilities with the convenience of PC or USB flash drive interface. The ergonomic design and large display make the TL2 ideally suited for use as a calibration reference thermometer and for recording temperature-time based data.

The TL2 calibration software creates custom coefficients for Callendar Van Dusen or ITS-90 curves using the reference points and TL2 readings. It then loads the coefficients to the TL2 and creates a report for each channel.

Standard 5-point Calibration Report, Nominal Points -20°, 0°, 49°, 93°, and 150°C. Report is also available in equivalent °F temperatures.

Ed Martin & associates, inc.

## SPECIFICATIONS

### Temperature Measurement

- 2 Channel temperature measurement
- Standard 5-pin DIN connector
- 200 Ω 4-wire sensor probe
- Standard system calibrated range of -20 to 150°C (-4 to 300°F)
- Linearization by Callendar-Van Dusen*
- Factory calibrations yield a tolerance of ±0. 03 °C (±0. 05 °F) (@ 23°C ambient temp.)
- Temperature time constant: 19 sec.
- NIST traceable report of test

### User Interface

- Large 13mm (0.5"), 6-digit LCD display with backlight
- Selectable 0.01 or 0.001 display resolution
- F (Fahrenheit), C (Celsius), K (Kelvin), or Ω (Ohms) selectable display output
- Easy viewing of Highest, Lowest, and Average Readings
- Easy Zero Offset adjustment for sensor drift
- Programmable SPDT relay output (3 Amp maximum)

### Construction

- Rugged, powder coated, steel enclosure 184mm x 133mm x 57mm (7.25" x 5.25" x 2.25")
- Standard 1.5m (5') cable
- 316 L stainless steel sensor design 6mm (¼") diameter
- Highly durable display window, graphics, and silicone keypad
- 0.74kg (1 lb, 10 oz) without temperature sensor & power cord

### Electronics

- Microcontroller and precision 20-bit A/D converter. Recommended Ambient Temperature Range for Best Accuracy is 0 to 44°C (32 to 112°F)

### Data Logging

- Internal real-time clock reference
- PC interface via USB (type A) for direct data capture using Windows OS HyperTerminal function
- Stand alone data capture to a dedicated USB (type B) flash drive interface, saved in comma delimited format
- 0.001 logging display resolution
- Selectable logging intervals: 1, 10, or 30 seconds, 1 minute, 1 hour, or when queried

### Included

- Wall mount AC power adapter for US & Canada (120 VAC) **
- USB type 'A' to PC cable included

### Optional Features

- High range sensors (up to 288°C , 550°F)
- 100 Ω sensors
- *ITS-90 Calibration
- **Country specific AC power supply

Specifications subject to change

ThermoProbe Inc.

## TP-Series Thermometers

# Probe Types

Ed Martin & associates, inc.

**We are proud to offer a wide variety of probe types for ThermoProbe TP-series thermometers:**

### Standard Weight

0.25 lb (0.11 Kg)

This reliable design is our most popular probe.

### Extra Weight

0.50 lb (0.23 Kg)

This design has the same diameter as the Standard Weight but is slightly longer and heavier.

### Railcar / No Weight

The Railcar probe is produced as a specialty probe for the railcar industry specifically for small diameter gauging tubes fitted in many tanker cars.

### Asphalt Weight

0.75 lb (0.34 Kg)

The probe of choice when working with molten asphalt, sulfur, or similar high-viscosity petrochemicals.

# Lufkin Gauging Tapes

Ed Martin & associates, inc.

## CHROME TAPES

| | |
|---|---|
| C1290 | 25' Inage Gauging Tape Complete |
| C1291sf590 | 33' Inage Gauging Tape Complete |
| C1293sf590 | 50' Inage Gauging Tape Complete |
| C1276D | 100' Engineers Tape for strapping |
| C2910MME590 | 10M/33' Gauging Tape Complete |
| C2915MME590 | 15M/50' Chrome Gauging Tape Complete |
| C2920MME150m | 20M/66' Chrome Gauging Tape |
| C2920MME590 | 20M/66' Chrome Gauging Inage Tape |
| C2930MME590 | 30M/100' Chrome Gauging Tape Complete |
| C2730DMM | 30M Peeerless Chrome Strapping Tape |
| C2750DMM | 50M Peerless Chrome Strapping Tape |
| C2750MME | 50M/164' Derrick Chrome Strapping |

FOR REFILLS ADD "O" TO THE CATALOG NUMBER

## CHROME NUBIAN TAPES

| | |
|---|---|
| CN1290sf590 | 25' Inage Gauging Tape Complete |
| CN1290SME | 25' (8M) Inage Gauging Tape Complete |
| CN1291sf590 | 33' Inage Gauging Tape Complete |
| CN1293SDf590 | 50' Inage Gauging Tape Complete |
| CN1293sf587 | 50' Outage Gauging Tape Complete – Refill Not Available from Lufkin |
| CN1293sf590 | 50' Inage Gauging Tape Complete |
| CN1293SMEsf590 | 50' (15M) Inage Met/Eng Gauging Tape Complete |
| CN1294sf587 | 66' Outage Gauging Tape Complete– Refill Not Available from Lufkin |
| CN1294sf590 | 66' Inage Gauging Tape Complete |
| CN1294SMEsf590 | 66" (20M) Inage Met/Eng Gauging Tape Complete |
| CN1295sf590 | 75' Inage Gauging Tape Complete |
| CN1295SME587 | 75' (23M) Outage Met/Eng Gauging Tape Complete – Refill Not Available from Lufkin |
| CN1295SMEsf590 | 75' (23M) Inage Met/Eng Gauging Tape Complete |
| CN1296sf590 | 100' Inage, Gauging Tape Complete |
| CN1296SMEsf590 | 100' (30M) Inage Met/Eng Gauging Tape Complete |
| CN1298SMEsf590 | 100' (30M) Inage Met/Eng Gauging Tape Complete |

FOR REFILLS ADD "O" TO THE CATALOG NUMBER

## NUBIAN

| | |
|---|---|
| N1290sf590 | 25' Inage Nubian Complete Tape |
| N1293sf590 | 50' Inage Nubian Complete Tape |
| N1294 | 50' Inage Nubian inches and 1/8th |
| N1294SD590 | 66' Inage Nubian 10ths Complete Tape |
| N1293SMsf590 | 50/23M Nubian Complete Tape |

## STAINLESS STEEL

| | |
|---|---|
| S1291sf590 | 33' Inage Stainless Steel Complete |
| S1293sf590 | 50' Inage Stainless Steel Complete |

# Plumb Bobs & Ullage Bars

Ed Martin & associates, inc.

## PLUMB BOBS

| | |
|---|---|
| 587 | Plumb Bob, Outage Graduated<br>Outage Bar 587 Marked in English and Metric |
| 587-12GME | Brass 12" 1"x3/8"x12" Metric / English |
| 587GME | 6" Plumb Bob Outage English/Metric |
| 590G | Plumb Bob, Inage 6 3/4" Graduated |
| 590G-SS | Plumb Bob inage 6 3/4" graduated SS |
| 590GM | Plumb Bob Inage mm/cm 20 oz |
| 590GME | Plumb Bob, Inage 6 3/4" Graduated (M/E) |
| 590GME-SS | Plumb Bob, Inage 6 3/4" Graduated, SS M/E |
| 590SD | Plumb Bob, Inage Bob 6 3/4" Graduated (10th and 100th) |

## ULLAGE BARS

| | |
|---|---|
| 591E | Plumb Bob, Inage Bob 18" Graduated (Inches and 8ths) |
| 591ME | Plumb Bob, Inage Bob 18" Graduated (M/E) |
| 591SD | Inage Bob 18" Graduated (10th and 100th) |
| 700-UB | Ullage Bar 12" Brass |
| 150MM | MM ullage |

587

590G

590GME

700-UB

591E

# Thermobobs & Tape Accessories

Ed Martin & associates, inc.

## THERMOBOBS

| | |
|---|---|
| TB-C | Thermobob Only |
| TB-120 | Thermobob Complete -20/120F |
| TB-180 | Thermobob Complete -20/180F |
| TB-220 | Thermobob Complete 20/220F |
| TBR-120 | Tube and Scale Refill Only -20/120F |
| TBR-180 | Tube and Scale Refill Only 20/180F |
| TBR-220 | Tube and Scale Refill Only 20/220F |

## HANDLE KITS

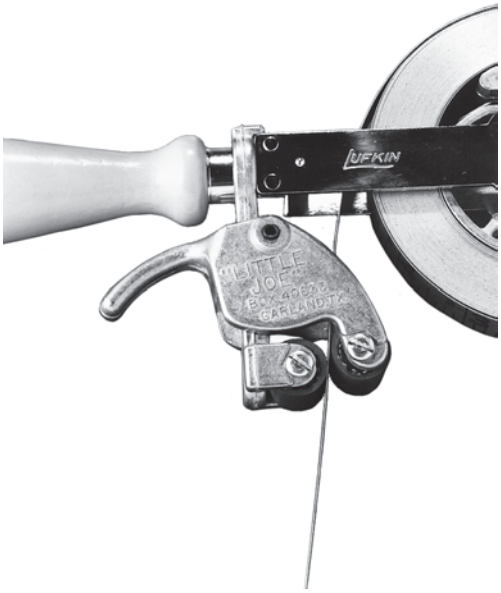
| | |
|---|---|
| 91-50 | 2 Arm Reel for 50', 66' and 75' Tape |
| 91-76 | Handle Assembly Kit |

## LITTLE JOE WIPERS

| | |
|---|---|
| 601-B | Little Joe Wiper |
| 602 | Neoprene Cylinder w/hardware |

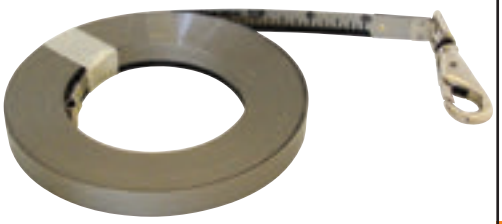
## GAUGE TAPE VERIFICATION SERVICES

Gauge Tape with attached bob verification services are offered meeting API Standard Chapter 3, Section 1A and are in accordance with Appendix A of that document.



# US Tapes

Ed Martin & associates, inc.



## Oil Gauge- Double Duty Complete Tapes

| Part# | Length | Description |
|---|---|---|
| 58812 | 18' | English Only, Chrome Nubian, Double Duty Inage |
| 58814 | 25' | English Only, Chrome Nubian, Double Duty Inage |
| 58816 | 33' | English Only, Chrome Nubian, Double Duty Inage |
| 58820 | 50' | English Only, Chrome Nubian, Double Duty Inage |
| 58822 | 66' | English Only, Chrome Nubian, Double Duty Inage |
| 58824 | 75' | English Only, Chrome Nubian, Double Duty Inage |
| 58826 | 100' | English Only, Chrome Nubian, Double Duty Inage |

Outage tapes available in Double Duty. Please call for pricing.

## Oil Gauge- Double Duty Refills

| | | |
|---|---|---|
| 58912 | 18' | English Only, Chrome Nubian, Double Duty Inage |
| 58914 | 25' | English Only, Chrome Nubian, Double Duty Inage |
| 58916 | 33' | English Only, Chrome Nubian, Double Duty Inage |
| 58920 | 50' | English Only, Chrome Nubian, Double Duty Inage |
| 58922 | 66' | English Only, Chrome Nubian, Double Duty Inage |
| 58924 | 75' | English Only, Chrome Nubian, Double Duty Inage |
| 58926 | 100' | English Only, Chrome Nubian, Double Duty Inage |

Outage tapes available in Double Duty. Please call for pricing.

## Oil Gauge- Plated Complete Tapes

| | | |
|---|---|---|
| 58811 | 18′ | Complete, English, Chrome Clad, Double Duty Inage |
| 58813 | 25′ | Complete, English, Chrome Clad, Double Duty Inage |
| 58815 | 33′ | Complete, English, Chrome Clad, Double Duty Inage |
| 58819 | 50′ | Complete, English, Chrome Clad, Double Duty Inage |
| 58821 | 66′ | Complete, English, Chrome Clad, Double Duty Inage |
| 58823 | 75′ | Complete, English, Chrome Clad, Double Duty Inage |
| 58825 | 100′ | Complete, English, Chrome Clad, Double Duty Inage |

Outage tapes available in Plated Tapes. Please call for pricing.

## Oil Gauge- Plated Tape Refills

| | | |
|---|---|---|
| 58911 | 18′ | Refill, English, Chrome Clad, Double Duty Inage |
| 58913 | 25′ | Refill, English, Chrome Clad, Double Duty Inage |
| 58915 | 33′ | Refill, English, Chrome Clad, Double Duty Inage |
| 58919 | 50′ | Refill, English, Chrome Clad, Double Duty Inage |
| 58921 | 66′ | Refill, English, Chrome Clad, Double Duty Inage |
| 58923 | 75′ | Refill, English, Chrome Clad, Double Duty Inage |
| 58925 | 100′ | Refill, English, Chrome Clad, Double Duty Inage |

Outage tapes available in Plated Tapes. Please call for pricing.

# US Tapes

Ed Martin & associates, inc.

## US. Tapes Complete Tapes – 10th & 100th Chrome

| Part# | Length | Description |
|---|---|---|
| 58831 | 50′ | Complete Tape marked in 10th's and 100th's |
| 58833 | 66′ | Complete Tape marked in 10th's and 100th's |
| 58828 | 75′ | Complete Tape marked in 10th's and 100th's |
| 58829 | 100′ | Complete Tape marked in 10th's and 100th's |

## US. Tapes Refill Tapes – 10th & 100th Chrome

| | | |
|---|---|---|
| 58933 | 66′ | Complete Tape marked in 10th's and 100th's |
| 58931 | 75′ | Complete Tape marked in 10th's and 100th's |
| 58929 | 100′ | Complete Tape marked in 10th's and 100th's |

## Oil Gauge- Etched Stainless Complete Tapes

| | | |
|---|---|---|
| 62447 | 33' / 10M | Complete, Metric / English, Stainless Steel, Inage |
| 62449 | 50' / 15M | Complete, Metric / English, Stainless Steel, Inage |
| 62451 | 66' / 20M | Complete, Metric / English, Stainless Steel, Inage |
| 62452 | 75' / 23M | Complete, Metric / English, Stainless Steel, Inage |
| 62455 | 100' / 30M | Complete, Metric / English, Stainless Steel, Inage |

Outage tapes available in Etched Stainless Tapes. Please call for pricing.

## Oil Gauge- Etched Stainless Refills

| | | |
|---|---|---|
| 62547 | 33' / 10M | Refill, Metric / English, Stainless Steel, Inage. |
| 62549 | 50' / 15M | Refill, Metric / English, Stainless Steel, Inage |
| 62551 | 66' / 20M | Refill, Metric / English, Stainless Steel, Inage |
| 62554 | 75' / 23M | Refill, Metric / English, Stainless Steel, Inage |
| 62555 | 100' / 30M | Refill, Metric / English, Stainless Steel, Inage |

Outage tapes available in Etched Stainless Tapes. Please call for pricing.

# MMC-UTI

## Gauging Equipment

Ed Martin & associates, inc.

## CLOSED (GAS-TIGHT) and RESTRICTED

## FLEXI-DIP CLOSED TRIMODE GAUGING TAPE

The Portable Closed Flexi-Dip measuring tape is a battery-operated electronic unit that is totally gas-tight. When installed in a vapor-control valve mounted on a storage (cargo) tank, it forms a tightly sealed system that prevents toxic vapors from escaping and creates a closed gauging system for that tank. The tape is marked in metric or English units and is anti-static coated (as is the sensor). In addition, the tape is color marked to make tape direction and motion easily seen and to ensure full rewind position. A coiled grounding cable with large alligator clip is standard. This closed system is recognized by many worldwide regulatory bodies as equivalent to a fixed gauging system as long as the tape remains in the valve from the beginning until the end of loading or discharging of the tank.

| | |
|---|---|
| Accuracy | Tape Reading: Fluid level +/- 1/8 inch (3mm), +/- 0.01% of F.S. tape LGT (F.S. = Full Scale)<br>Temperature Display: +/- 0.5° F (+/- 0.2° C), +/- 1 digit error |
| Ambient Temperature Limits | -20° F (-7° C) to 120° F (49° C). |
| Product Temperature Limits | -40° F (-40° C) to 190° F (88° C) |
| Battery | 9-Volt Duracell MN1604 |
| Tape Lengths | 50 ft. (15m), 75 ft. (25m), 100 ft. (30M) |
| Typical Weights | 14 lbs. (6.4 KG) |
| Pressure Limits | 3 psi working, 7.5 psi maximum |
| Approvals | Intrinsically safe–FM, BASEEFA, CSA, NKK (Japan) |

# MMC Closed Chemical Peek Units

Ed Martin & associates, inc.

FFM = Fahrenheit Factory Mutual
CBS = Celsius Baseefa (British Approval)
CFM = Celsius Factory Mutual
TC = PETROLEUM CLOSED
SC = CHEMICAL CLOSED
PES = PETROLEUM SENSOR
PK = CHEMICAL PEEK SENSOR & UNIT

## CHEMICAL CLOSED WITH CHEMICAL PEEK SENSOR IN FAHRENHEIT

### FFM/SC/PK

| | |
|---|---|
| 2401SC050FFM-B-PK | 50' CLOSED MMC W/ B BARREL |
| 2401SC075FFM-B-PK | 75' CLOSED MMC W/ B BARREL |
| 2401SC100FFM-B-PK | 100' CLOSED MMC W/ B BARREL |

## CHEMICAL CLOSED WITH CHEMICAL PEEK SENSOR IN CELSIUS BASEEFA

### (BRITISH APPROVAL) CBS/SC/PK

| | |
|---|---|
| 2401SC15MCBS-B-PK | 15M CLOSED MMC W/ B BARREL |
| 2401SC20MCBS-B-PK | 20M CLOSED MMC W/ B BARREL |
| 2401SC25MCBS-B-PK | 25M CLOSED MMC W/ B BARREL |
| 2401SC30MCBS-B-PK | 30M CLOSED MMC W/ B BARREL |
| 2401SC35MCBS-B-PK | 35M CLOSED MMC W/ B BARREL |

## CHEMICAL CLOSED WITH CHEMICAL PEEK SENSOR IN CELSIUS

### CFM/SC/PK

| | |
|---|---|
| 2401SC050CFM-B-PK | 50' CLOSED MMC W/ B BARREL |
| 2401SC065CFM-B-PK | 65' CLOSED MMC W/ B BARREL |
| 2401SC075CFM-B-PK | 75' CLOSED MMC W/ B BARREL |
| 2401SC100CFM-B-PK | 100' CLOSED MMC W/ B BARREL |

**BARRELS CAN ALSO CAN BE (-MB) (-C50) (-F50) (-TS-A2) (-TS-C2) (-TT)**

# MMC Closed Chemical PES Units

Ed Martin & associates, inc.

FFM = Fahrenheit Factory Mutual
CBS = Celsius Baseefa (British Approval)
CFM = Celsius Factory Mutual
TC = PETROLEUM CLOSED
SC = CHEMICAL CLOSED
PES = PETROLEUM SENSOR
PK = CHEMICAL PEEK SENSOR

## FFM/SC/PES

| | |
|---|---|
| 2401SC050FFM-B-PES | 50' CLOSED MMC W/ B BARREL |
| 2401SC065FFM-B-PES | 65' CLOSED MMC W/ B BARREL |
| 2401SC075FFM-B-PES | 75' CLOSED MMC W/ B BARREL |
| 2401SC100FFM-B-PES | 100' CLOSED MMC W/ B BARREL |

## CBS/SC/PES

| | |
|---|---|
| 2401SC15MCBS-B-PES | 15M CLOSED MMC W/ B BARREL |
| 2401SC20MCBS-B-PES | 20M CLOSED MMC W/ B BARREL |
| 2401SC25MCBS-B-PES | 25M CLOSED MMC W/ B BARREL |
| 2401SC30MCBS-B-PES | 30M CLOSED MMC W/ B BARREL |
| 2401SC35MCBS-B-PES | 35M CLOSED MMC W/ B BARREL |

## CFM/SC/PES

| | |
|---|---|
| 2401SC050CFM-B-PES | 50' CLOSED MMC W/ B BARREL |
| 2401SC065CFM-B-PES | 65' CLOSED MMC W/ B BARREL |
| 2401SC075CFM-B-PES | 75' CLOSED MMC W/ B BARREL |
| 2401SC100CFM-B-PES | 100' CLOSED MMC W/ B BARREL |

**BARRELS CAN ALSO CAN BE (-MB) (-C50) (-F50) (-TS-A2) (-TS-C2) (-TT)**

# MMC Closed Petro Units

Ed Martin & associates, inc.

FFM = Fahrenheit Factory Mutual
CBS = Celsius Baseefa (British Approval)
CFM = Celsius Factory Mutual
TC = PETROLEUM CLOSED
SC = CHEMICAL CLOSED
PES = PETROLEUM SENSOR
PK = CHEMICAL PEEK SENSOR & UNIT

## FFM/TC

| | |
|---|---|
| 2401TC050FFM-B | 50' CLOSED MMC W/ B BARREL |
| 2401TC065FFM-B | 65' CLOSED MMC W/ B BARREL |
| 2401TC075FFM-B | 75' CLOSED MMC W/ B BARREL |
| 2401TC100FFM-B | 100' CLOSED MMC W/ B BARREL |

## CBS/TC

| | |
|---|---|
| 2401TC15MCBS-B | 15M CLOSED MMC W/ B BARREL |
| 2401TC20MCBS-B | 20M CLOSED MMC W/ B BARREL |
| 2401TC25MCBS-B | 25M CLOSED MMC W/ B BARREL |
| 2401TC30MCBS-B | 30M CLOSED MMC W/ B BARREL |
| 2401TC35MCBS-B | 35M CLOSED MMC W/ B BARREL |

## CFM/TC

| | |
|---|---|
| 2401TC050CFM-B | 50' CLOSED MMC W/ B BARREL |
| 2401TC065CFM-B | 65' CLOSED MMC W/ B BARREL |
| 2401TC075CFM-B | 75' CLOSED MMC W/ B BARREL |
| 2401TC100CFM-B | 100' CLOSED MMC W/ B BARREL |

**BARRELS CANALSO CAN BE (-MB) (-C50) (-F50) (-TS-A2) (-TS-C2) (-TT)**

# MMC Restricted & Open Gauging Tapes

Ed Martin & associates, inc.

Restricted and Open Gauging Tapes provide a convenient and accurate means for measuring ullage, product temperature and the oil-water interface. The units are configured to operate in the trimode, bimode, interface or temperature mode. Each instrument is designed to maximize ease of use. A single penetration of each tank can provide comprehensive data about internal tank conditions. When the electronic probe senses hydrocarbon, a steady tone is heard; when sensing water, it emits an intermittent tone. Temperature is shown on an LED display in the hub of the instrument.

## SPECIFICATIONS

**Accuracy**

Tape: +/- 1/8" (+/- 3mm), +/- 0.01% of F.S. tape LGT (F.S. = Full Scale)
Temperature Display: +/- 0.5° F (+/- 0.2° C) +/- 1 digit error
Calibration Range: 32° F (0° C) to 176° F (88° C)
Probe: For dryness to within 3/8 inch (10mm) of bottom

**Ambient Temperature Limits**

-20° F (-7° C) to 120° F (49° C)

**Product Temperature Limits**

-40° F (-40° C) to 190° F (88° C)

**Application**

Open gauging ("O" type) (Safe product vapors only)
Restricted gauging ("R" type) via MMC vapor-control valve

**Battery**

9-Volt Duracell MN1604

**Operation**

U-Ullage, I-Interface (oil/water), T-Temperature

**Tape Lengths**

Single-Sided: 50 ft. (15m), 75 ft. (25m), 100 ft. (30M) 120ft. (37m) 165 ft. (50m)
Single-Sided: 30m, 100 ft. engineering scale (ft., 1/10 ft., 1/100ft.)

**Typical Weights**

50 ft/15m – "R" 8lbs (3.6kg) "F" 7 lbs. (3.2kg)
100 ft/30m – "R" 9lbs (4.1 kg) "F" 8lbs. (3.6kg)
165 ft/50m – "R" 11 lbs (5 kg) "F" 10 lbs. (4.5 kg)

**Approvals**

Intrinsically safe–FM, BASEEFA, CSA, NKK (Japan), ATEX (SIRA)

# MMC
# Restricted Units

Ed Martin & associates, inc.

FFM = Fahrenheit Factory Mutual
CBS = Celsius Baseefa (British Approval)
CFM = Celsius Factory Mutual

## FFM

| | |
|---|---|
| 2401TR050FFM-B | 50' RESTRICTED MMC W/ B BARREL |
| 2401TR065FFM-B | 65' RESTRICTED MMC W/ B BARREL |
| 2401TR075FFM-B | 75' RESTRICTED MMC W/ B BARREL |
| 2401TR100FFM-B | 100' RESTRICTED MMC W/ B BARREL |

## CBS

| | |
|---|---|
| 2401TR15MCBS-B | 15M RETRICTED MMC W/ B BARREL |
| 2401TR20MCBS-B | 20M RETRICTED MMC W/ B BARREL |
| 2401TR25MCBS-B | 25M RETRICTED MMC W/ B BARREL |
| 2401TR30MCBS-B | 30M RETRICTED MMC W/ B BARREL |
| 2401TR40MCBS-B | 40M RETRICTED MMC W/ B BARREL |

## CFM

| | |
|---|---|
| 2401TR050CFM-B | 50' RESTRICTED MMC W/ B BARREL |
| 2401TR065CFM-B | 65' RESTRICTED MMC W/ B BARREL |
| 2401TR075CFM-B | 75' RESTRICTED MMC W/ B BARREL |
| 2401TR100CFM-B | 100' RESTRICTED MMC W/ B BARREL |

**BARRELS CAN ALSO CAN BE (-MB) (-C50) (-F50) (-TS-A2) (-TS-C2) (-TT)**

# Multi-Level and MMC Samplers

Ed Martin & associates, inc.

Ed Martin and Associates' Multi-level samplers provide a variety of sampling options in either open tanks or through restricted, vapor locked systems. It is also designed for RVP gasoline sampling in accordance with API standards.

- All in one sampler for RVP sampling and transfer of gasoline
- Running sampler (composite sampling)
- Zone Sampler (top, middle, bottom)
- All level sampler (representative sampling)
- Uses same technology as the EPA approved RVP nozzle extension method for sampling gasoline
- Volume capacity equals 75 to 80 percent of 1 quart
- Modular and non-sparking brass construction
- With the MMC housing the Multi-level sampler can be easily used with MMC restricted Samplers. This Multilevel Sampler fits inside the MMC closed or restricted Tape sampling systems. No messy cotton cords are needed to take samples at exact locations in a tank.

| | |
|---|---|
| ML-AN | Adjust a neck opening up to ¾" (19mm) |
| ML-12 Tube | 12" Tube |
| ML-Coupler | Coupler |
| ML-16 Tube | 16" Tube |
| ML-RVP | RVP Bottom (High Pressure) |
| ML-Zone | Zone Bottom |
| ML-Solid | Solid Bottom (Plug) |
| ML-Funnel | Funnel for use with RVP Bottom |
| ML-Cork | Top assembly with cork pull |
| ML-Top | Top for rope pull for ML-MMC |
| MMC-S2562TS-CPL | Optional Hermetic Adaptor for TS |

Shown as Adjust a Neck, 16" barrel, Coupler, 12" Barrel, RVP (High pressure discharge, Funnel and Zone Bottom Optional Solid bottom Available (Not Shown)

MMC Closed Self Contained Sampler

# MMC Samplers

Ed Martin & associates, inc.

## MMC RESTRICTED SAMPLERS

| | |
|---|---|
| 2326R25621001/2-B | 100' RESTRICTED SAMPLER w/ B BARREL |
| 2326R256240M1/2-B | 40M RESTRICTED SAMPLER w/ B BARREL |

## MMC CLOSED FIXED IN PLACE SAMPLERS

| | |
|---|---|
| 2326C1791001/2-B | 100' CLOSED SAMPLER w/ B BARREL |
| 2326C17940M1/2-B | 40M CLOSED SAMPLER w/ B BARREL |

## MMC CLOSED SELF CONTAINED SAMPLERS

| | |
|---|---|
| 2326C1821001/2-B | 100' CLOSED PETROLEUM SAMPLER w/ B BARREL |
| 2326C18240M1/2-B | 40M CLOSED PETROLEUM SAMPLER w/ B BARREL |

## MMC CLOSED CHEMICAL SELF CONTAINED SAMPLERS

| | |
|---|---|
| 2326C1821001/2-CHEM-B | 100' CLOSED CHEMICAL SAMPLER w/ B BARREL |
| 2326C18240M1/2-CHEM-B | 40M CLOSED CHEMICAL SAMPLER w/ B BARREL |

**BARRELS CAN ALSO CAN BE (-MB) (-C50) (-F50) (-TS-A2) (-TS-C2) (-TT)**

# Gauging Supplies

Ed Martin & associates, inc.

## GAUGE BOOKS

| | |
|---|---|
| CGB-100 | Canvas Gauging book |
| GB-100 | Small Gauging Book |
| GBR-100 | Gauging Book Refills |
| WRGB-100 | "Write in the Rain" All-weather Gauging Book |

## GAUGE PASTE

| | |
|---|---|
| 200 | Kolor Kut Water Indicating Paste |
| 250 | Kolor Kut Modified for Methanol |
| 300 | McCabe Water Indicating Paste |
| 400 | Kolor Kut Gas/Oil Indicating Paste |
| 500 | McCabe Gasoline Indicating Paste |
| 550 | Masterline Indicating Paste |
| 560 | Masterline Gas Finder |

## BOTTLE CARRIERS

| | |
|---|---|
| PC 2-4 | 4 Pocket Carrier, for Quart Bottle |
| PC 2-6 | 6 Pocket Carrier, for Quart Bottle |
| PC 2-8 | 8 Pocket Carrier, for Quart Bottle |
| PC 2-12 | 12 Pocket Carrier, for Quart Bottle |
| PC-17 Special | Open Pocket Carrier 17" |
| PC-21 Special | Open Pocket Carrier 21" |
| PCPT 2-8 | 8 Pocket Carrier, for Pint Bottle |
| PCPT 2-12 | 12 Pocket Carrier, for Pint Bottle |

## BACON BOMBS

| | |
|---|---|
| K274 (K27400) | Drum Thief |
| K274-SS (K27401) | Drum Thief Stainless Steel |
| K276 (K27600) | 3/4" Opening Sampler |
| K276-1 (K27610) | 1 1/2" Opening Sampler |
| K277 (K27700) | Sampler 32 oz. Bacon Bomb |
| K277A (K27790) | Sampler 16 oz. Bacon Bomb |
| K277A SS (K27791) | Stainless Steel Bacon Bomb Sampler 16 oz |
| K277D (K27760) | Sampler 4 oz. Pencil Type Bacon Bomb |
| K277DSS (K27761) | Stainless Steel Sampler 4 oz. Pencil Type |
| K277PG (K27762) | Clear Barrel Sampler 16 oz Bacon Bomb |
| K277SS (K27701) | Stainless Steel Sampler 32 oz. Bacon Bomb |
| K27785 | Sampler 8 oz Bacon Bomb w/metal seat |

# Gauging Supplies

Ed Martin & associates, inc.

## SAMPLE BOTTLE CONTAINERS

| | |
|---|---|
| SC A-20 | Brass Tank Bottom Sampler |
| SC A-30 | Gallon Sample Container |
| SC A-50 | One Quart Sampler used for Narrow opening |
| SC A-60 | One Quart Sampler used for Quick dips |
| SC A-60-1 | One Quart Sampler with 1" Opening |
| SC A-60-2 | One Quart Sampler with 1 1/2" Opening |
| SC A-62 | Two Quart Sampler with 1 1/2" Opening |
| SC A-70 | Brass Container for Quart Boston |
| SC A-70-PINT | Brass Container for Pint Bottles |
| SC A-70-Special | Brass Quart for plastic coated bottles |
| SC A-70B | Brass Container for Vinegar Bottle |
| SC A-70-GAL | Brass Container for Gallon Bottle |
| SC A-70-SS | Stainless Steel Container for Quart Bottle |
| SC A-70-SS PINT | Stainless Steel Container for Pint Bottles |

## LOWERING ACCESSORIES

| | |
|---|---|
| SC 3.5 | Lead Weight w/ring 3.0 pounds |
| 110B047 | Stainless Steel Round Weight 2 lb weight w/eye ring |
| 110B049 | Brass Round Weight 2 lb w/eye ring |
| BR-CHAIN | Brass Chain w/fittings per/ft. |
| SC-500 | Cotton Rope, 100% 500 Feet |
| SC-500-8 | Cotton Rope, 100% 500 Feet #8 |
| SC-1000 | Cotton Rope, 100% 1000 Feet |
| SC-1000-8 | Cotton Rope 100% 1000 #8 |
| SC-3000 | Cotton Rope, 100% 3000 Feet |
| SC-ROPE-50FT | 50' Braided Marked 2 ft (Custom lengths and markings available. Please call for pricing.) |
| SC-ROPE-75 | 75' Braided Cotton Rope Marked every 2 ft. (Custom lengths and markings available. Please call for pricing.) |
| SC-ROPE-75-NM | 75' Braided Cotton Rope no markings #7 (Custom lengths and markings available. Please call for pricing.) |
| SC-CORK | Plain cork drilled no accessories |
| SC-CORK-SS | Cork w/Accessories f/Qt. Bottle - Stainless Steel |
| SS-CHAIN | SS Specify length/sold by the foot (min 25ft) |
| SS-FITTING | Fittings for stainless steel chain |
| ST-250 | Sealing wire dispenser Pack 250' |
| ST-1000 | Sealing wire dispenser Pack 1000' |

# Gauging Supplies

Ed Martin & associates, inc.

## OIL THEIF

| | |
|---|---|
| P100-12 Clear | 12″ Barrel-Clear |
| P100-12 Brass | 12″ Barrel-Brass |
| P100-16 Clear | 16″ Barrel-Clear |
| P100-16 Brass | 16″ Barrel-Brass |
| P100-18 Clear | 18″ Barrel-Clear |
| P100-18 Brass | 18″ Barrel-Brass |
| P100-24 Clear | 24″ Barrel-Clear |
| P100-24 Brass | 24″ Barrel-Brass |

## SAFETY GAS ALERT

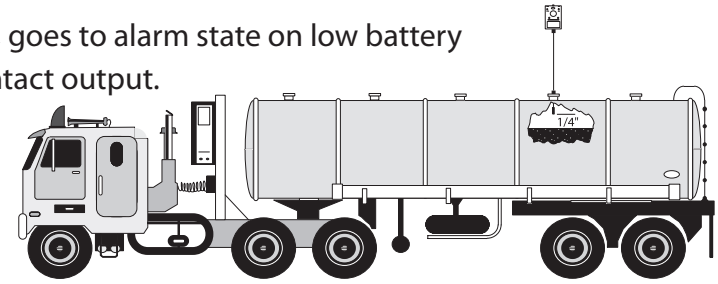
| | |
|---|---|
| GA24XT-H510 | Gas Alert Extreme H2S |

# Portable Level Alarms

Ed Martin & associates, inc.

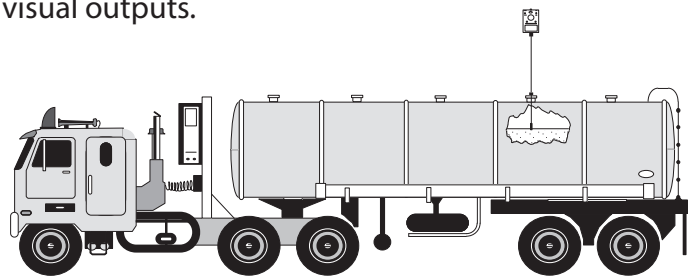
## Outalarm™ A-100 Battery Operated Portable Level Alarm Tank Cars, Tank Trucks, Barges

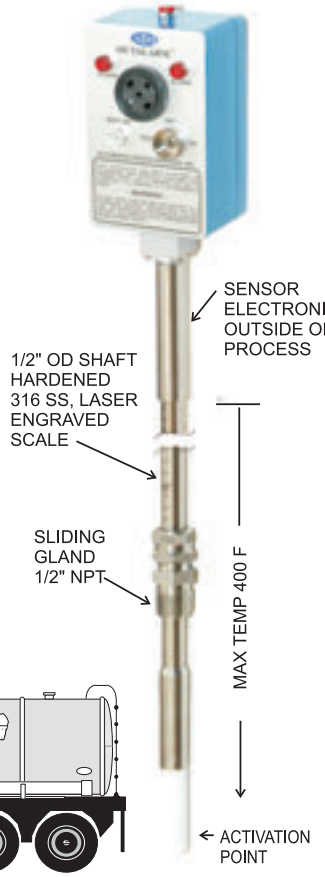
- No moving parts, non-contact proximity sensor.
- Rugged weather and corrosion resistant construction.
- Intrinsically safe design per ANSI/UL913 for Class I, Div 1 Groups A, B, C & D Hazardous
- Requires no calibration or adjustment.
- Operates up to 1000 hours on single 9V alkaline battery.
- Adjustable insertion length through standard 1/2" NPT fitting.
- High intensity audible and flashing visual outputs.
- Graduated rod, laser engraved.
- Fail Safe continuous battery monitor, goes to alarm state on low battery
- Optional opti-isolated solid state contact output.
- Temperature Range -14 to 212F



## Outalarm™ A-100HT Battery Operated Portable Level Alarm Tank Cars, Tank Trucks, Barges

- Totally self contained –no wires, no tubing, no external power.
- Rugged weather and corrosion resistant construction.
- Tip sensitive capacitance level sensor, remote digital electronics
- Intrinsically safe design per ANSI/UL913for Class I, Div1 Groups A, B, C,&D Hazardous Areas.
- Operates up to 2000 hours on single 9V alkaline battery.
- Adjustable insertion length through standard 1/2"NPTfitting.
- High intensity audible and flashing visual outputs.
- Graduated rod, laser engraved.
- Maximum Probe Temperature 400F



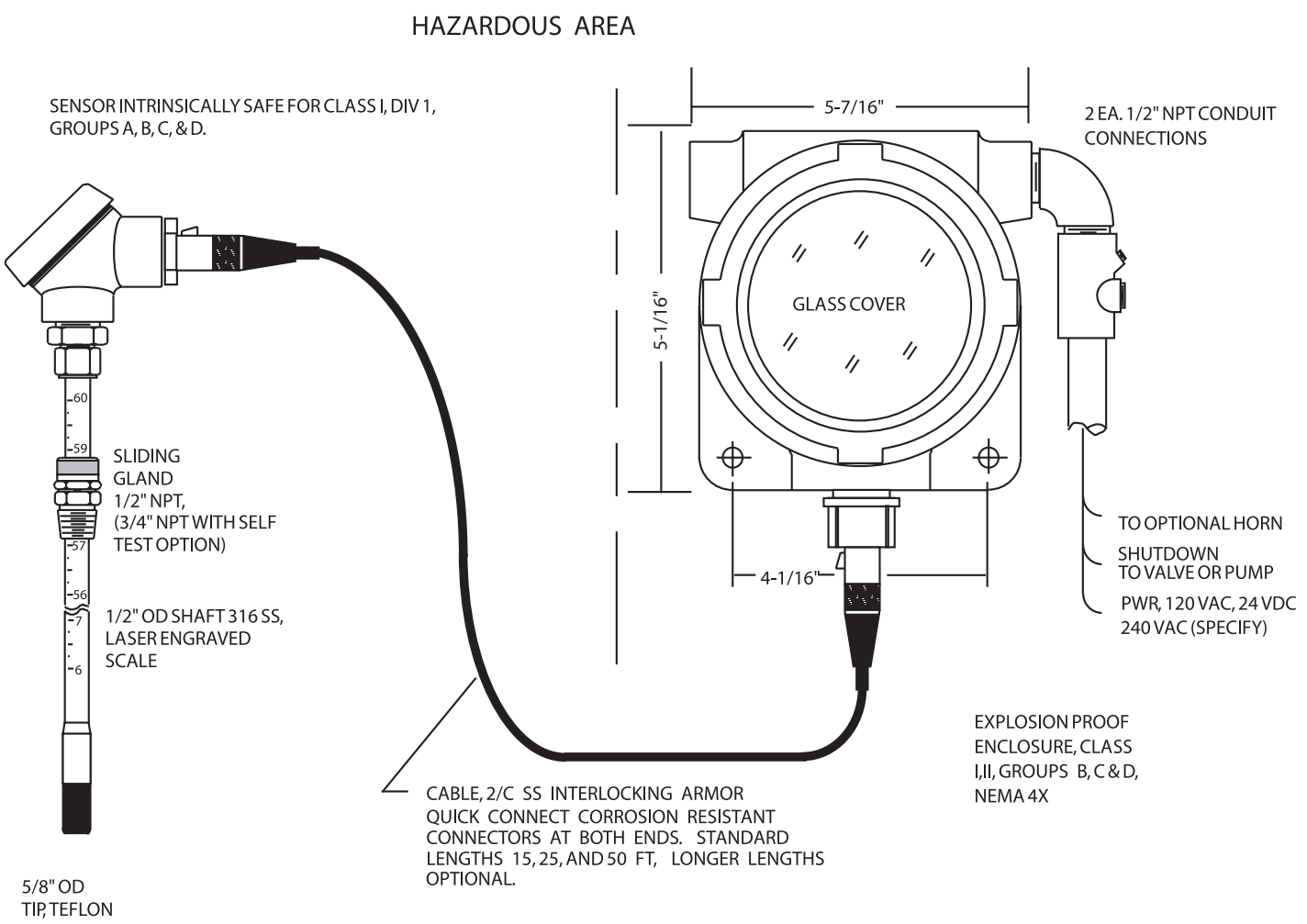

SENSOR ELECTRONICS OUTSIDE OF PROCESS
1/2" OD SHAFT HARDENED 316 SS, LASER ENGRAVED SCALE
SLIDING GLAND 1/2" NPT
MAX TEMP 400 F
ACTIVATION POINT

# Liquid Level Controls for Overfill Prevention

Ed Martin & associates, inc.

## SPILLGUARD TM A-210 AUTOMATIC HIGH LEVEL SHUTDOWN TANK CARS, TANK TRUCKS, BARGES

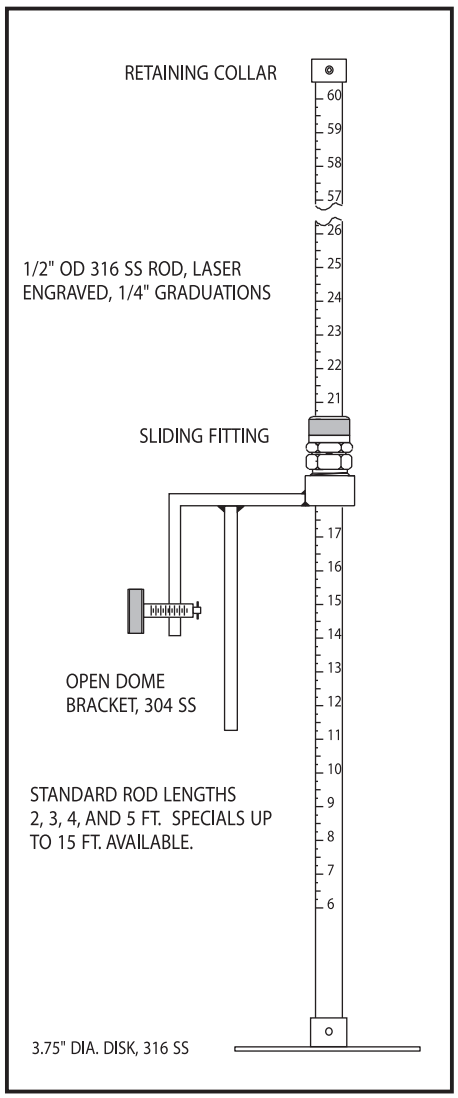
- Rugged Explosion Proof, weather and corrosion resistant control unit with LED status lights visible
- Probe can be portable or permanently installed in vessel.
- Variable insertion length, laser engraved graduated rod with 1/4" graduations.
- Optional self test feature permits testing entire system prior to loading product.
- Rugged, corrosion and chemical resistant probe-to-controller cable, protected by stainless steel interlocking armor sheath with heavy duty latching connectors at both ends.
- Probe temperature range -14 to +212F.


HAZARDOUS AREA
SENSOR INTRINSICALLY SAFE FOR CLASS I, DIV 1, GROUPS A, B, C, & D.
5-7/16"
2 EA. 1/2" NPT CONDUIT CONNECTIONS
GLASS COVER
5-1/16"
60
59
57
56
7
6
SLIDING GLAND 1/2" NPT, (3/4" NPT WITH SELF TEST OPTION)
1/2" OD SHAFT 316 SS, LASER ENGRAVED SCALE
4-1/16"
TO OPTIONAL HORN
SHUTDOWN TO VALVE OR PUMP
PWR, 120 VAC, 24 VDC 240 VAC (SPECIFY)
EXPLOSION PROOF ENCLOSURE, CLASS I,II, GROUPS B, C & D, NEMA 4X
CABLE, 2/C SS INTERLOCKING ARMOR QUICK CONNECT CORROSION RESISTANT CONNECTORS AT BOTH ENDS. STANDARD LENGTHS 15, 25, AND 50 FT, LONGER LENGTHS OPTIONAL.
5/8" OD TIP, TEFLON

# OUTGAGE™

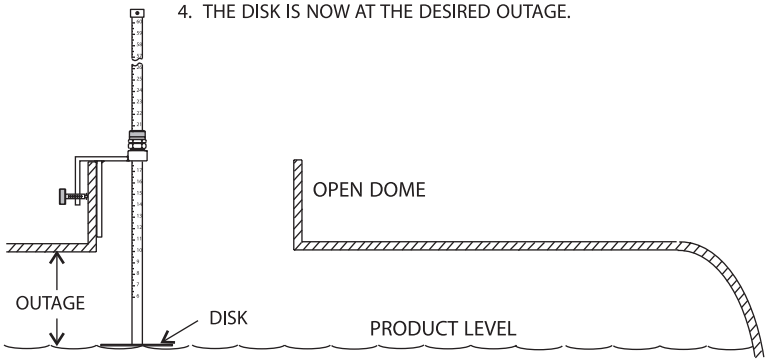
## Stainless Steel Outgage Gage

Ed Martin & associates, inc.

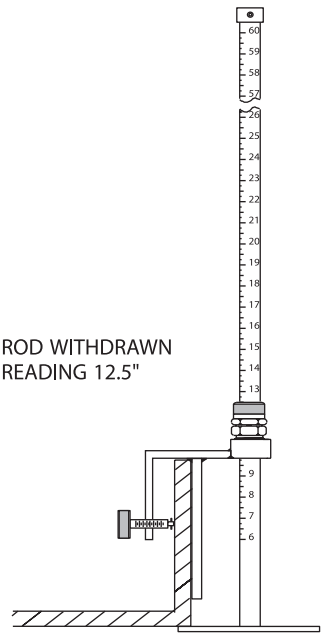

RETAINING COLLAR
1/2" OD 316 SS ROD, LASER ENGRAVED, 1/4" GRADUATIONS
SLIDING FITTING
OPEN DOME BRACKET, 304 SS
STANDARD ROD LENGTHS 2, 3, 4, AND 5 FT. SPECIALS UP TO 15 FT. AVAILABLE.
3.75" DIA. DISK, 316 SS

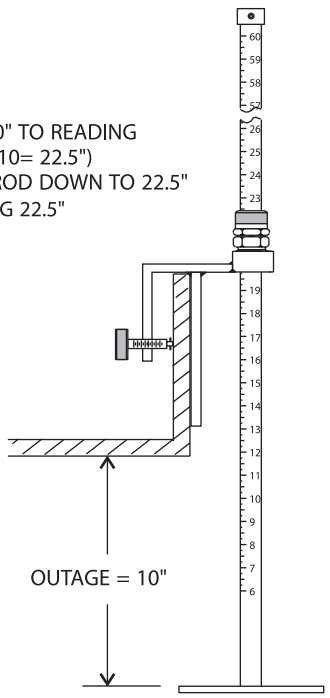
TO SET OUTAGE:

1. CLAMP BRACKET TO VERTICAL SECTION OF DOME.
2. WITHDRAW GAGE ROD UNTIL DISK TOUCHES INSIDE SHELL OF TANK. NOTE READING ON ROD.
3. ADD DESIRED OUTAGE TO READING AND PUSH DOWN ROD TO THE CALCULATED READING.
4. THE DISK IS NOW AT THE DESIRED OUTAGE.




EXAMPLE SETTING 10" OUTAGE:



# Quickstick for Ullage Measurement in Railcars and Tank Trucks

Ed Martin & associates, inc.

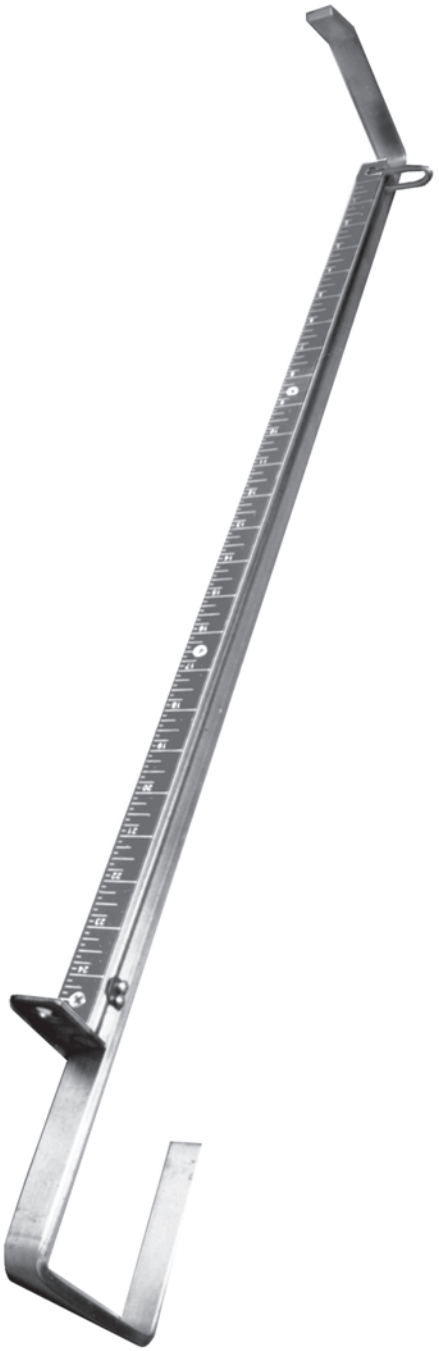
The **Quickstick** is a unique device for measuring ullage up to 48 inches in Railcars and Tank Trucks.

- Easily attaches to the dome of railcars gauging point for accurate measurement of ullage.
- Can be used for custody transfer measurements.
- Verification services available for N.I.S.T. Traceability for length

| | |
|---|---|
| 800-TGS-1/8 | 24" QUICKStiCK (Reinforced) |
| 800-TGS-SS | 24" QUICKSTICK Stainless Steel |
| 52-00216-00007 | 48" QUICKSTICK |
| Q-Verify | VERIFICATION SERVICES TRACEABLE TO NIST |

Operation instructions for **Quickstick**

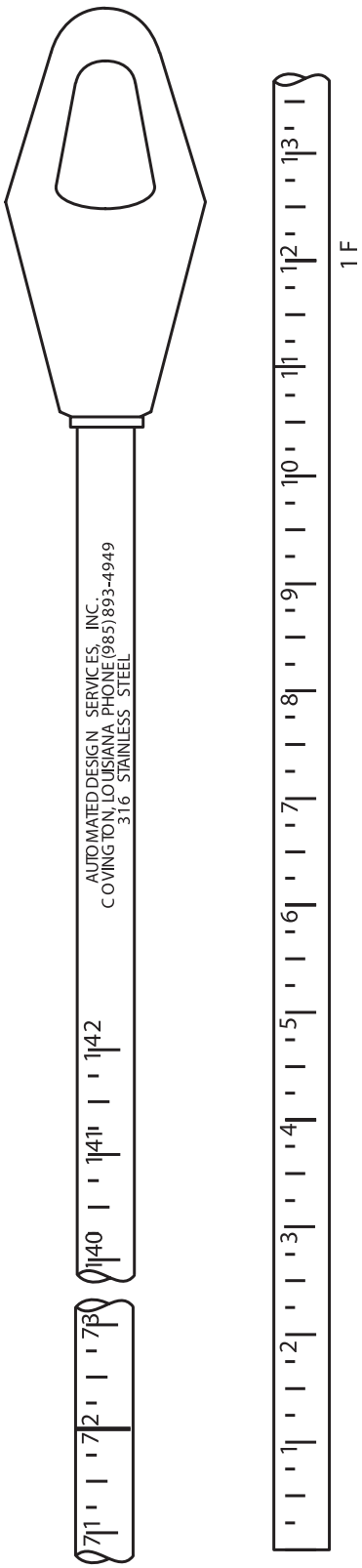
- Grasp Ouickstick by handle (1) lower into tank car placing back (2) against collar of hatch, bringing the measurement reference catch (3) up against the top of tank car shell.
- With this in place, lower the stainless steel measurement rod by the handle (4), until the paddle (5) touches the top of the product.
- The outage is then read on the ruler at the measurement where the handle (4) points.
- The rod tension adjustment screws and plate are located at the bottom of the Ouickstick.
- Stainless steel model available. This model includes additional ruler for measuring manway height.
- Verification traceability also available.



# Stainless Steel Gage Rod

**12 ft. Long**

Ed Martin & associates, inc.




## SPECIFICATIONS

- 1/2" X 0.065 Wt., Hardened 316 Stainless Steel
- Laser Engraved Scale with 1/4" Graduations
- Rods come in two sections that screw together at the midpoint
- Foot Marks inscribed on Rod at 1 foot intervals below inch mark
- Heavy Duty plastic Handle
- Optional Sliding Innage Bar

Specifications subject to change

## ASSEMBLY

1. The two sections of the gage rod are a matched pair and are packaged together to preserve the alignment of the engraving. To assemble, screw the sections together.

2. To permanently lock the threaded connection use the Loctite No. 262 thread locker provided. Apply a small quantity of the thread locker to the male stud and screw together. please note that once the Loctite cures it will be impossible to disassemble the rod sections.

Rod Coupling

Optional Innage Bar

Handle

Optional End Stop (Uses Stop with Innage Bar)

# ASTM Thermometer

Ed Martin & associates, inc.

| ASTM | CATALOG | DESCRIPTION | TEMP RANGE | DIV | LENGTH | IMMERSION |
|---|---|---|---|---|---|---|
| 1C | 10-1C | Partial Immersion | -20 to 150°C | 1° | 322mm | 76mm |
| 1F | 10-1F | Partial Immersion | 0 to 302°F | 2° | 322mm | 76mm |
| 2C | 10-2C | Partial Immersion | -5 to 300°C | 1° | 390mm | 76mm |
| 2F | 10-2F | Partial Immersion | 20 to 580°F | 2° | 390mm | 76mm |
| 3C | 10-3C | Partial Immersion | -5 to 400°C | 1° | 415mm | 76mm |
| 3F | 10-3F | Partial Immersion | 20 to 760°F | 2° | 415mm | 76mm |
| 4C | 10-4C | Acid Heat | -1 to 105°C | 0.5° | 375mm | 152mm |
| 4F | 10-4F | Acid Heat | 30 to 220°F | 1° | 375mm | 152mm |
| 5C | 10-5C | Cloud & Pour, High | -38 to 50°C | 1° | 230mm | 108mm |
| 5F | 10-5F | Cloud & Pour, High | -36 to 120°F | 2° | 230mm | 108mm |
| 6C | 10-6C | Cloud & Pour, Low | -80 to 20°C | 1° | 230mm | 76mm |
| 6F | 10-6F | Cloud & Pour, Low | -112 to 70°F | 2° | 230mm | 76mm |
| 7C | 10-7C | Distillation, Low | -2 to 300°C | 1° | 385mm | Total |
| 7F | 10-7F | Distillation, Low | 30 to 580°F | 2° | 385mm | Total |
| 8C | 10-8C | Distillation, High | -2 to 400°C | 1° | 385mm | Total |
| 8F | 10-8F | Distillation, High | 30 to 760°F | 2° | 385mm | Total |
| 9C | 10-9C | Pensky-Martens, Low | -5 to 110°C | 0.5° | 290mm | 57mm |
| 9F | 10-9F | Pensky-Martens, Low | 20 to 230°F | 1° | 290mm | 57mm |
| 10C | 10-10C | Pensky-Martens, High | 90 to 370°C | 2° | 290mm | 57mm |
| 10F | 10-10F | Pensky-Martens, High | 200 to 700°F | 5° | 290mm | 57mm |
| 11C | 10-11C | Open Flash | -6 to 400°C | 2° | 310mm | 25mm |
| 11F | 10-11F | Open Flash | 20 to 760°F | 5° | 310mm | 25mm |
| 12C | 10-12C | Gravity (Density) | -20 to 102°C | 0.2° | 420mm | Total |
| 12F | 10-12F | Gravity (Density) | -5 to 215°F | 0.5° | 420mm | Total |
| 13C | 10-13C | Loss on Heat | 155 to 170°C | 0.5° | 155mm | Total |
| 14C | 10-14C | Paraffin Wax Melt Point | 38 to 82°C | 0.1° | 375mm | 79mm |
| 14F | 10-14F | Paraffin Wax Melt Point | 100 to 180°F | 0.2° | 375mm | 79mm |
| 15C | 10-15C | Softening Point, Low | -2 to 80°C | 0.2° | 397mm | Total |
| 15F | 10-15F | Softening Point, Low | 30 to 180°F | 0.5° | 397mm | Total |
| 16C | 10-16C | Softening Point, High | 30 to 200°C | 0.5° | 397mm | Total |
| 16F | 10-16F | Softening Point, High | 85 to 392°F | 1° | 397mm | Total |
| 17C | 10-17C | Viscosity Saybolt | 19 to 27°C | 0.1° | 275mm | Total |
| 17F | 10-17F | Viscosity Saybolt | 66 to 80°F | 0.2° | 275mm | Total |
| 18C | 10-18C | Say Vis & Reid Vapor | 34 to 42°C | 0.1° | 275mm | Total |
| 18F | 10-18F | Say Vis & Reid Vapor | 94 to 108°F | 0.2° | 275mm | Total |
| 19C | 10-19C | Viscosity Saybolt | 49 to 57°C | 0.1° | 275mm | Total |
| 19F | 10-19F | Viscosity Saybolt | 120 to 134°F | 0.2° | 275mm | Total |
| 20C | 10-20C | Viscosity Saybolt | 57 to 65°C | 0.1° | 275mm | Total |
| 20F | 10-20F | Viscosity Saybolt | 134 to 148°F | 0.2° | 275mm | Total |
| 21C | 10-21C | Viscosity Saybolt | 79 to 87°C | 0.1° | 275mm | Total |
| 21F | 10-21F | Viscosity Saybolt | 174 to 188°F | 0.2° | 275mm | Total |

# ASTM Thermometer (cont)

Ed Martin & associates, inc.

| ASTM | CATALOG | DESCRIPTION | TEMP RANGE | DIV | LENGTH | IMMERSION |
|---|---|---|---|---|---|---|
| 22C | 10-22C | Say Vis & Oxy Stab. | 95 to 103°C | 0.1° | 275mm | Total |
| 22F | 10-22F | Say Vis & Oxy Stab. | 204 to 218°F | 0.2° | 275mm | Total |
| 23C | 10-23C | Viscosity Engler | 18 to 28°C | 0.2° | 212mm | 90mm |
| 24C | 10-24C | Viscosity Engler | 39 to 54°C | 0.2° | 237mm | 90mm |
| 25C | 10-25C | Viscosity Engler | 95 to 105°C | 0.2° | 212mm | 90mm |
| 26C | 10-26C | Stab Test Sol Nit Cell | 130 to 140°C | 0.1° | 463mm | Total |
| 27C | 10-27C | Turpentine Dist. | 147 to 182°C | 0.5° | 301mm | 76mm |
| 28C | 10-28C | Kinematic viscosity | 36.6 to 39.4°C | 0.05° | 305mm | Total |
| 28F | 10-28F | Kinematic viscosity | 97.5 to 102.5°F | 0.1° | 305mm | Total |
| 29C | 10-29C | Kinematic viscosity | 52.6 to 55.4°C | 0.05° | 305mm | Total |
| 29F | 10-29F | Kinematic viscosity | 127.5 to 132.5°F | 0.1° | 305mm | Total |
| 30F | 10-30F | Kinematic viscosity | 207.5 to 212.5°F | 0.1° | 305mm | Total |
| 31F | 10-31F | Reid Vapor | -30 to 120°F | 1° | 305mm | Total |
| 33C | 10-33C | Aniline Point | -38 to 42°C | 0.2° | 420mm | 50mm |
| 33F | 10-33F | Aniline Point | -36.5 to 107.5°F | 0.5° | 420mm | 50mm |
| 34C | 10-34C | Aniline Point | 25 to 105°C | 0.2° | 420mm | 50mm |
| 34F | 10-34F | Aniline Point | 77 to 221°F | 0.5° | 420mm | 50mm |
| 35C | 10-35C | Aniline Point | 90 to 170°C | 0.2° | 420mm | 50mm |
| 35F | 10-35F | Aniline Point | 194 to 338°F | 0.5° | 420mm | 50mm |
| 36C | 10-36C | Titer Test | -2 to 68°C | 0.2° | 405mm | 45mm |
| 37C | 10-37C | Solvents Distillation | -2 to 52°C | 0.2° | 395mm | 100mm |
| 38C | 10-38C | Solvents Distillation | 24 to 78°C | 0.2° | 395mm | 100mm |
| 39C | 10-39C | Solvents Distillation | 48 to 102°C | 0.2° | 395mm | 100mm |
| 40C | 10-40C | Solvents Distillation | 72 to 126°C | 0.2° | 395mm | 100mm |
| 41C | 10-41C | Solvents Distillation | 98 to 152°C | 0.2° | 395mm | 100mm |
| 42C | 10-42C | Solvents Distillation | 95 to 255°C | 0.5° | 395mm | 100mm |
| 43C | 10-43C | Kinematic Viscosity | -51.6 to -34°C | 0.1° | 417mm | Total |
| 43F | 10-43F | Kinematic Viscosity | -61 to -29°F | 0.2° | 417mm | Total |
| 44C | 10-44C | Kinematic viscosity | 18.5 to 21.5°C | 0.05° | 305mm | Total |
| 44F | 10-44F | Kinematic viscosity | 66.5 to 71.5°F | 0.1° | 305mm | Total |
| 45C | 10 -45C | Kinematic viscosity | 23.6 to 26.4°C | 0.05° | 305mm | Total |
| 45F | 10-45F | Kinematic viscosity | 74.5 to 79.5°F | 0.1° | 305mm | Total |
| 46C | 10-46C | Kinematic viscosity | 48.6 to 51.4°C | 0.05° | 305mm | Total |
| 46F | 10-46F | Kinematic viscosity | 119.5 to 124.5°F | 0.1° | 305mm | Total |
| 47C | 10-47C | Kinematic viscosity | 58.6 to 61.4°C | 0.05° | 305mm | Total |
| 47F | 10-47F | Kinematic viscosity | 137.5 to 142.5°F | 0.1° | 305mm | Total |
| 48C | 10-48C | Kinematic viscosity | 80.6 to 83.4°C | 0.05° | 305mm | Total |
| 48F | 10-48F | Kinematic viscosity | 177.5 to 182.5°F | 0.1° | 305mm | Total |
| 49C | 10-49C | Stormer Viscosity | 20 to 70°C | 0.2 ° | 305mm | 65mm |
| 50F | 10-50F | Gas Calorimeter inlet | 54 to 101°F | 0.1° | 468mm | Total |
| 51F | 10-51F | Gas Calorimeter outlet | 69 to 116°F | 0.1° | 468mm | Total |
| 52C | 10-52C | Butad. Boiling point | -10 to 5°C | 0.1° | 162mm | Total |

# ASTM Thermometer (cont)

Ed Martin & associates, inc.

| ASTM | CATALOG | DESCRIPTION | TEMP RANGE | DIV | LENGTH | IMMERSION |
|---|---|---|---|---|---|---|
| 53C | 10-53C | Benzene Freezing Pt | -0.6 to 10.4°C | 0.1° | 189mm | Total |
| 54C | 10-54C | Congealing Point | 20 to 100.6°C | 0.2° | 310mm | Total |
| 54F | 10-54F | Congealing Point | 68 to 213°F | 0.5° | 310mm | Total |
| 56C | 10-56C | Bomb Calorimeter | 19 to 35°C | 0.02° | 585mm | Total |
| 56F | 10-56F | Bomb Calorimeter | 66 to 95°F | 0.05° | 585mm | Total |
| 57C | 10-57C | Flash Tag Closed Low | -20 to 50°C | 0.5° | 290mm | 57mm |
| 57F | 10-57F | Flash Tag Closed Low | -4 to 122°F | 1° | 290mm | 57mm |
| 58C | 10-58C | Tank, Refill, Low | -34 to 49°C | 0.5° | 300mm | Total |
| 58F | 10-58F | Tank, Refill, Low | -30 to 120°F | 1° | 300mm | Total |
| 59C | 10-59C | Tank, Refill, Medium | -18 to 82°C | 0.5° | 300mm | Total |
| 59F | 10-59F | Tank, Refill, Medium | 0 to 180°F | 1° | 300mm | Total |
| 60C | 10-60C | Tank, Refill, High | 77 to 260°C | 1° | 300mm | Total |
| 60F | 10-60F | Tank, Refill, High | 170 to 500°F | 2° | 300mm | Total |
| 61C | 10-61C | Petrolatum Melt Pt | 32 to 127°C | 0.2° | 380mm | 79mm |
| 61F | 10-61F | Petrolatum Melt Pt | 90 to 260°F | 0.5° | 380mm | 79mm |
| 62C | 10-62C | Reference Standard | -38 to 2°C | 0.1° | 379mm | Total |
| 62F | 10-62F | Reference Standard | -36 to 35°F | 0.2° | 379mm | Total |
| 63C | 10-63C | Reference Standard | -8 to 32°C | 0.1° | 379mm | Total |
| 63F | 10-63F | Reference Standard | 18 to 89°F | 0.2° | 379mm | Total |
| 64C | 10-64C | Reference Standard | 25 to 55°C | 0.1° | 379mm | Total |
| 64F | 10-64F | Reference Standard | 77 to 131°F | 0.2° | 379mm | Total |
| 65C | 10-65C | Reference Standard | 50 to 80°C | 0.1° | 379mm | Total |
| 65F | 10-65F | Reference Standard | 122 to 176°F | 0.2° | 379mm | Total |
| 66C | 10-66C | Reference Standard | 75 to 105°C | 0.1° | 379mm | Total |
| 66F | 10-66F | Reference Standard | 167 to 221°F | 0.2° | 379mm | Total |
| 67C | 10-67C | Reference Standard | 95 to 155°C | 0.2° | 379mm | Total |
| 67F | 10-67F | Reference Standard | 203 to 311°F | 0.5° | 379mm | Total |
| 68C | 10-68C | Reference Standard | 145 to 205°C | 0.2° | 379mm | Total |
| 68F | 10-68F | Reference Standard | 293 to 401°F | 0.5° | 379mm | Total |
| 69C | 10-69C | Reference Standard | 195 to 305°C | 0.5° | 379mm | Total |
| 69F | 10-69F | Reference Standard | 383 to 581°F | 1.0° | 379mm | Total |
| 70C | 10-70C | Reference Standard | 295 to 405°C | 0.5° | 379mm | Total |
| 70F | 10-70F | Reference Standard | 563 to 761°F | 1.0° | 379mm | Total |
| 71C | 10-71C | Oil in Wax | -37 to 21°C | 0.5° | 355mm | 76mm |
| 71F | 10-71F | Oil in Wax | -35 to 70°F | 1° | 355mm | 76mm |
| 72C | 10-72C | Kinematic viscosity | -19.4 to -16.6°C | 0.05° | 305mm | Total |
| 72F | 10-72F | Kinematic viscosity | -2.5 to +2.5°F | 0.1° | 305mm | Total |
| 73C | 10-73C | Kinematic viscosity | -41.4 to -38.6°C | 0.05° | 305mm | Total |
| 73F | 10-73F | Kinematic viscosity | -42.5 to -37.5°F | 0.1° | 305mm | Total |
| 74C | 10-74C | Kinematic viscosity | -55.4 to -52.6°C | 0.05° | 305mm | Total |
| 74F | 10-74F | Kinematic viscosity | -67.5 to -62.5°F | 0.1° | 305mm | Total |
| 75F | 10-75F | Coolant Freezing Pt | -35 to 35°F | 0.5° | 408mm | 100mm |

# ASTM Thermometer (cont)

Ed Martin & associates, inc.

| ASTM | CATALOG | DESCRIPTION | TEMP RANGE | DIV | LENGTH | IMMERSION |
|---|---|---|---|---|---|---|
| 76F | 10-76F | Coolant Freezing Pt | -65 to +5°F | 0.5° | 408mm | 100mm |
| 77F | 10-77F | Viscosity Saybolt | 245 to 265°F | 0.5° | 275mm | Total |
| 78F | 10-78F | Viscosity Saybolt | 295 to 315°F | 0.5° | 275mm | Total |
| 79F | 10-79F | Viscosity Saybolt | 345 to 365°F | 0.5° | 275mm | Total |
| 80F | 10-80F | Viscosity Saybolt | 395 to 415°F | 0.5° | 275mm | Total |
| 81F | 10-81F | Viscosity, Saybolt | 445 to 465°F | 0.5° | 275mm | Total |
| 82C | 10-82C | Fuel Rating, Engine | -15 to 105°C | 1° | 165mm | 30 mm |
| 82F | 10-82F | Fuel Rating, Engine | 0 to 220°F | 2° | 165mm | 30mm |
| 83C | 10-83C | Fuel Rating, Air | 15 to 70°C | 1° | 174mm | 40mm |
| 83F | 10-83F | Fuel Rating, Air | 60 to 160°F | 1° | 174mm | 40mm |
| 84C | 10-84C | Fuel Rating, Orifice | 25 to 80°C | 1° | 387mm | 249mm |
| 84F | 10-84F | Fuel Rating, Orifice | 75 to 175°F | 1° | 387mm | 249mm |
| 85C | 10-85C | Fuel Rating, Surge | 40 to 150°C | 1° | 314mm | 181mm |
| 85F | 10-85F | Fuel Rating, Surge | 100 to 300°F | 2° | 314mm | 181mm |
| 86C | 10-86C | Fuel Rating, Mix | 95 to 175°C | 1° | 170mm | 35mm |
| 86F | 10-86F | Fuel Rating, Mix | 200 to 350°F | 2° | 170mm | 35mm |
| 87C | 10-87C | Fuel Rating, Coolant | 150 to 205°C | 1° | 175mm | 40mm |
| 87F | 10-87F | Fuel Rating, Coolant | 300 to 400°F | 1° | 175mm | 40mm |
| 88C | 10-88C | Vegetable Oil Flash | 10 to 200°C | 1° | 287mm | 57mm |
| 88F | 10-88F | Vegetable Oil Flash | 50 to 392°F | 2° | 287mm | 57mm |
| 89C | 10-89C | Solidification Point | -20 to +10°C | 0.1° | 370mm | 76mm |
| 90C | 10-90C | Solidification Point | 0 to 30°C | 0.1° | 370mm | 76mm |
| 91C | 10-91C | Solidification Point | 20 to 50°C | 0.1° | 370mm | 76mm |
| 92C | 10-92C | Solidification Point | 40 to 70°C | 0.1° | 370mm | 76mm |
| 93C | 10-93C | Solidification Point | 60 to 90°C | 0.1° | 370mm | 76mm |
| 94C | 10-94C | Solidification Point | 80 to 110°C | 0.1° | 370mm | 76mm |
| 95C | 10-95C | Solidification Point | 100 to 130°C | 0.1° | 370mm | 76mm |
| 96C | 10-96C | Solidification Point | 120 to 150°C | 0.1° | 370mm | 76mm |
| 97C | 10-97C | Tank, Refill | -18 to 49°C | 0.5° | 300mm | Total |
| 97F | 10-97F | Tank, Refill | 0 to 120°F | 1° | 300mm | Total |
| 98C | 10-98C | Tank, Refill | 16 to 82°C | 0.5° | 300mm | Total |
| 98F | 10-98F | Tank, Refill | 60 to 180°F | 1° | 300mm | Total |
| 99C | 10-99C | Weathering Test | -50 to +5°C | 0.2° | 305mm | 35mm |
| 99F | 10-99F | Weathering Test | -58 to 41°F | 0.5° | 305mm | 35mm |
| 100C | 10-100C | Solidification Point | 145 to 205°C | 0.2° | 370mm | 76mm |
| 101C | 10-101C | Solidification Point | 195 to 305°C | 0.5° | 370mm | 76mm |
| 102C | 10-102C | Solvents Distillation | 123 to 177°C | 0.2° | 395mm | 100mm |
| 103C | 10-103C | Solvents Distillation | 148 to 202°C | 0.2° | 395mm | 100mm |
| 104C | 10-104C | Solvents Distillation | 173 to 227°C | 0.2° | 395mm | 100mm |
| 105C | 10-105C | Solvents Distillation | 198 to 252°C | 0.2° | 395mm | 100mm |
| 106C | 10-106C | Solvents Distillation | 223 to 277°C | 0.2° | 395mm | 100mm |

# ASTM Thermometer (cont)

Ed Martin & associates, inc.

| ASTM | CATALOG | DESCRIPTION | TEMP RANGE | DIV | LENGTH | IMMERSION |
|---|---|---|---|---|---|---|
| 107C | 10-107C | Solvents Distillation | 248 to 302°C | 0.2° | 395mm | 100mm |
| 108F | 10-108F | Saybolt viscosity | 270 to 290°F | 0.5° | 275mm | Total |
| 109F | 10-109F | Saybolt viscosity | 320 to 340°F | 0.5° | 275mm | Total |
| 110C | 10-110C | Kinematic viscosity | 133.6 to 136.4°C | 0.05° | 305mm | Total |
| 110F | 10-110F | Kinematic viscosity | 272.5 to 277.5°F | 0.1° | 305mm | Total |
| 111C | 10-111C | Tar Acid Distillation | 170 to 250°C | 0.2° | 395mm | 100mm |
| 112C | 10-112C | Solidification Benzene | 4 to 6°C | 0.02° | 215mm | Total |
| 113C | 10-113C | Bituminous Materials Softening Point | -1 to 175°C | 0.5° | 406mm | Total |
| 113F | 10-113F | Bituminous Materials Softening Point | 30 to 350°F | 1° | 406mm | Total |
| 114C | 10-114C | Aviation Fuel Freezing Point | -80 to 20°C | 0.5° | 300mm | Total |
| 114F | 10-114F | Aviation Fuel Freezing Point | -112 to 70°F | 1.0° | 300mm | Total |
| 115C | 10-115C | Beckman Differential | 0 to 6°C | 0.01° | 610mm | stem |
| 116C | 10-116C | Bomb Calorimeter | 18.9 to 25.1°C | 0.01° | 609mm | Total |
| 117C | 10-117C | Bomb Calorimeter | 23.9 to 30.1°C | 0.01° | 609mm | Total |
| 118C | 10-118C | Kinematic viscosity | 28.6 to 31.4°C | 0.05° | 305mm | Total |
| 118F | 10-118F | Kinematic viscosity | 83.5 to 88.5°F | 0.1° | 305mm | Total |
| 119C | 10-119C | Coolant Freezing Point | -38.3 to -30°C | 0.05° | 305mm | Total |
| 119F | 10-119F | Coolant Freezing Point | -37 to -22°F | 0.1° | 305mm | Total |
| 120C | 10-120C | Kinematic viscosity | 38.5 to 41.5°C | 0.05° | 305mm | Total |
| 121C | 10-121C | Kinematic viscosity | 98.6 to 101.4°C | 0.05° | 305mm | Total |
| 122C | 10-122C | Brookfield Viscosity | -45 to -35°C | 0.1° | 300mm | Total |
| 123C | 10-123C | Brookfield Viscosity | -35 to -25°C | 0.1° | 300mm | Total |
| 124C | 10-124C | Brookfield Viscosity | -25 to -15°C | 0.1° | 300mm | Total |
| 125C | 10-125C | Brookfield Viscosity | -15 to -5°C | 0.1° | 300mm | Total |
| 126C | 10-126C | Kinematic viscosity | -27.4 to -24.6°C | 0.05° | 305mm | Total |
| 126F | 10-126F | Kinematic viscosity | -17.5 to -12.5°F | 0.1° | 305mm | Total |
| 127C | 10-127C | Kinematic viscosity | -21.4 to -18.6°C | 0.05° | 305mm | Total |
| 128C | 10-128C | Kinematic viscosity | -1.4 to +1.4°C | 0.05° | 305mm | Total |
| 128F | 10-128F | Kinematic viscosity | 29.5 to 34.5°F | 0.1° | 305mm | Total |
| 129C | 10-129C | Kinematic viscosity | 91.6 to 94.4°C | 0.05° | 305mm | Total |
| 129F | 10-129F | Kinematic viscosity | 197.5 to 202.5°F | 0.1° | 305mm | Total |
| 130C | 10-130C | Tank Gauging, Refill | -7 to 110°C | 0.5° | 305mm | Total |
| 130F | 10-130F | Tank Gauging, Refill | 20 to 220°F | 1° | 305mm | Total |
| 132C | 10-132C | Kinematic viscosity | 148.6 to 151.4°C | 0.05° | 305mm | Total |
| 133C | 10-133C | Bending Beam Rheometer | -38 to +2°C | 0.1° | 379mm | 76mm |
| 134C | 10-134C | Sludge | 144 to 156°C | 0.2° | 270mm | 100mm |
| 135C | 10-135C | Fuel Rating Air-High | 38 to 93°C | 1° | 168mm | 40mm |
| 135F | 10-135F | Fuel Rating Air-High | 100 to 200°F | 1° | 168mm | 40mm |
| 136C | 10-136C | Aviation Fuel Density | -20 to 60°C | 0.2° | 285mm | Total |
| 136F | 10-136F | Aviation Fuel Density | -5 to 140°F | 0.5° | 285mm | Total |
| 137C | 10-137C | Oxidation Cell Test | 80 to 100°C | 0.1° | 250mm | 76mm |

# Environmental Thermometer

Ed Martin & associates, inc.

## NIST Traceable Thermometers for Freezers, Refrigerators, Incubators and Ovens

- Specifically designed to comply with CLIA and EPA specifications
- Precision mercury in glass or red spirit filled thermometers
- Supplied with NIST Traceable, ISO/IEC 17025 Accredited Certificate of Calibration.
- TEFLON® ENCAPSULATED for safety, breakage resistance and to contain the mercury and glass in the event of a breakage.

| Cat No | Temperature Range | Application | Filling Liquid | Div |
|---|---|---|---|---|
| 210-000 | -30 to +1°C | Freezer | Mercury | 0.5° |
| 210-000-RL | -30 to +1°C | Freezer | Red Spirit | 0.5° |
| 210-002 | -5 to +20°C | Refrigerator | Mercury | 0.5° |
| 210-002-RL | -5 to +20°C | Refrigerator | Red Spirit | 0.5° |
| 210-003 | 18 to 50°C | Incubators | Mercury | 0.5° |
| 210-003-RL | 18 to 50°C | Incubators | Red Spirit | 0.5° |
| 210-008 | -5 to 130°C | Ovens | Mercury | 1.0° |
| 210-008-RL | -5 to 130°C | Ovens | Red Spirit | 1.0° |
| 210-010 | -0.6 to 10.4°C | Refrigerator | Mercury | 0.1° |
| 210-012 | -5 to 205°C | Ovens | Mercury | 1.0° |

Mounted in polypropylene bottle, filled with mineral oil (pharmaceutical grade) or sand (oven ranges) to prevent changes of the reading when chamber is opened to read the thermometer.

# SAMA Thermometer

Ed Martin & associates, inc.

Precision laboratory thermometers are supplied in yellow back glass with permanent pigmentation of graduations. All of these instruments are aged and annealed for extended accurate service life and are suitable for certification.

| Catalog # | Description | SAMA | Range | Div. | Length | Imm |
|---|---|---|---|---|---|---|
| 10-600 | Extreme Precision | CT40Y | -1 to 51°C | 0.1° | 460mm | Total |
| 10-602 | Extreme Precision | CP40Y | -1 to 51°C | 0.1° | 460mm | 76mm |
| 10-608 | Extreme Precision | CT45Y | -1 to 101°C | 0.1° | 610mm | Total |
| 10-610 | Extreme Precision | CP45Y | -1 to 101°C | 0.1° | 610mm | 76mm |
| 10-612 | Extreme Precision | CT50Y | -1 to 201°C | 0.2° | 610mm | Total |
| 10-614 | Extreme Precision | CP50Y | -1 to 201°C | 0.2° | 610mm | 76mm |
| 10-620 | Extreme Precision | FT40Y | +30 to 124°F | 0.2° | 457mm | Total |
| 10-622 | Extreme Precision | FP40Y | +30 to 124°F | 0.2° | 457mm | 76mm |
| 10-624 | Extreme Precision | - | +30 to 124°F | 0.1° | 610mm | Total |
| 10-626 | Extreme Precision | - | +30 to 124°F | 0.1° | 610mm | 76mm |
| 10-628 | Extreme Precision | FT45Y | +30 to 214°F | 0.2° | 610mm | Total |
| 10-630 | Extreme Precision | FP45Y | +30 to 214°F | 0.2° | 610mm | 76mm |
| 10-632 | Extreme Precision | FT50Y | +30 to 394°F | 0.5° | 610mm | Total |
| 10-634 | Extreme Precision | FP50Y | +30 to 394°F | 0.5° | 610mm | 76mm |
| 10-002 | General Purpose | CT10Y | -35 to 50°F | 1° | 305mm | Total |
| 10-006 | General Purpose | CT15Y | -20 to 10°C | 1° | 305mm | Total |
| 10-010 | General Purpose | CT20Y | -20 to 150°C | 1° | 305mm | Total |
| 10-018 | General Purpose | CT25Y | -10 to 260°F | 1° | 405mm | Total |
| 10-004 | General Purpose | CP10Y | -35 to 50°F | 1° | 305mm | 76mm |
| 10-008 | General Purpose | CP15Y | 20 to 110°C | 1° | 305mm | 76mm |
| 10-012 | General Purpose | CP20Y | -20 to 150°C | 1° | 305mm | 76mm |
| 10-020 | General Purpose | CP25Y | -10 to 260°C | 1° | 405mm | 76mm |
| 10-106 | General Purpose | FT10Y | -30 to 120°F | 1° | 305mm | Total |
| 10-114 | General Purpose | FT15Y | 0 to 230°F | 2° | 305mm | Total |
| 10-138 | General Purpose | FT25Y | 20 to 500°F | 2° | 405mm | Total |
| 10-108 | General Purpose | FP10Y | -30 to 120°F | 1° | 305mm | 76mm |
| 10-116 | General Purpose | FP15Y | 0 to 230°F | 2° | 305mm | 76mm |
| 10-140 | General Purpose | FP25Y | 20 to 500°F | 2° | 405mm | 76mm |

DUPONT TEFLON® ENCAPSULATION

Any of the thermometers on this page (and most throughout this catalog, with ranges not exceeding 260°C (500°F), can be furnished with a protective Teflon sheath to reduce breakage, afford protection against acids and alkali attack, and to contain the mercury and glass in the event of breakage. Add suffix '-TE' to catalog number.

# Reference Standard Certified ASTM Thermometers

Ed Martin & associates, inc.

| ASTM | CATALOG | DESCRIPTION | CERTIFIED | TEMPERATURE PER ASTM |
|---|---|---|---|---|
| 62C | 10-62C-C | -38 to 2°C | Reference Standard | -37, -30, -20, -10, 0C |
| 62F | 10-62F-C | -36 to 35°F | Reference Standard | -35, -15, 0, 15, 32F |
| 63C | 10-63C-C | -8 to 32°C | Reference Standard | -7, 0, 10, 20, 30C |
| 63F | 10-63F-C | 18 to 89°F | Reference Standard | 20, 32, 50, 70, 88F |
| 64C | 10-64C-C | 25 to 55°C | Reference Standard | 0, 25, 35, 45, 55C |
| 64F | 10-64F-C | 77 to 131°F | Reference Standard | 32, 80, 95, 115, 130F |
| 65C | 10-65C-C | 50 to 80°C | Reference Standard | 0, 50, 60, 70, 80C |
| 65F | 10-65F-C | 122 to 176°F | Reference Standard | 32, 125, 145, 160, 175F |
| 66C | 10-66C-C | 75 to 105°C | Reference Standard | 0, 75, 85, 95, 105C |
| 66F | 10-66F-C | 167 to 221°F | Reference Standard | 32, 168, 185, 200, 220F |
| 67C | 10-67C-C | 95 to 155°C | Reference Standard | 0, 100, 110, 130, 150C |
| 67F | 10-67F-C | 203 to 311°F | Reference Standard | 32, 205, 240, 275, 310F |
| 68C | 10-68C-C | 145 to 205°C | Reference Standard | 0, 150, 170, 190, 205C |
| 68F | 10-68F-C | 293 to 401°F | Reference Standard | 32, 300, 340, 370, 400F |
| 69C | 10-69C-C | 195 to 305°C | Reference Standard | 0, 200, 235, 270, 305C |
| 69F | 10-69F-C | 383 to 581°F | Reference Standard | 32, 400, 460, 520, 580F |
| 70C | 10-70C-C | 295 to 405°C | Reference Standard | 0, 300, 335, 370, 400C |
| 70F | 10-70F-C | 563 to 761°F | Reference Standard | 32, 570, 640, 700, 760F |

# Tank Gauging Thermometers

Ed Martin & associates, inc.

All of the thermometers noted 'Tank Gauging, refill' in the preceding ASTM thermometer section are designed for use in a variety of cases for gauging temperature of liquids in storage or transport tanks.
We have listed these units below with the various cases available:

## FAHRENHEIT RANGES

| ASTM # | Temp Range | Div. | Refill Only | Woodback Case | Tankmaster |
|---|---|---|---|---|---|
| 58F | -30 to 120°F | 1° | 10-58F | 10-58FWB | 10-58FTM |
| 97F | 0 to 120°F | 1° | 10-97F | 10-97FWB | 10-97FTM |
| 59F | 0 to 180°F | 1° | 10-59F | 10-59FWB | 10-59FTM |
| 98F | 60 to 180°F | 1° | 10-58F | 10-98FWB | 10-98FTM |
| 130F | 20 to 220°F | 1° | 10-130F | 10-130FWB | 10-130FTM |
| 60F | 170 to 500°F | 2° | 10-60F | 10-60FWB | 10-60FTM |
| | 20 to 260°F | 1° | 10-260F | 10-260FWB | 10-260FTM |

## CELSIUS RANGES

| ASTM # | Temp Range | Div. | Refill Only | Woodback Case | Tankmaster |
|---|---|---|---|---|---|
| 58C | -35 to 50°C | 0.5° | 10-58C | 10-58CWB | 10-58CTM |
| 97C | -18 to 49°C | 0.5° | 10-97C | 10-97CWB | 10-97CTM |
| 59C | -18 to 82°C | 0.5° | 10-59C | 10-59CWB | 10-59CTM |
| 98C | 16 to 82°C | 0.5° | 10-98C | 10-98CWB | 10-98CTM |
| 130C | -7 to 110°C | 0.5° | 10-130C | 10-130CWB | 10-130CTM |
| 60C | 77 to 260°C | 1° | 10-60C | 10-60CWB | 10-60CTM |
| 10-WB | | | ASTM Woodback with brass clips | | |
| 10-TM | | | Tankmaster | | |

•Add "-RRL" to end of part number for Red Reading Lens (not available in all ranges).
•Add "-C" to catalog number for NIST traceable calibration with report.

# PerformaTherm™ Thermometers

Ed Martin & associates, inc.

**• Accuracy • Tolerance • Repeatability • Reproducibility • Response Time**

**Performance** PerformaTherm™ thermometers have precise tolerances, low uncertainty, and quick response time like mercury instruments. Simply put, tolerance is the maximum permissible error of the instrument. Uncertainty is the maximum expected error of any reported reading Response time is the time needed to get a reliable reading. To say that traditional spirit thermometers are as accurate as mercury is misleading, as shown in the chart on the right. Performance measures for spirit thermometers are all significantly different compared to mercury and PerformaTherm™ instruments.

**Safety** PerformaTherm's STB blue liquid is safer than both mercury and most traditional spirit thermometer liquids. The proprietary formula is biodegradable, nontoxic, noncaustic, and nonhazardous. PerformaTherm™ is a revolutionary new thermometer unlike any on the market today. Therefore as part of our continuing safety initiative you may, upon request, return to us any one of your old mercury or spirit thermometers for each PerformaTherm™ you buy.

**Legibility** The dark blue liquid is easily read against our white-backed stem for additional assurance against errors.

**Guarantee** Each PerformaTherm™ is 100% guaranteed, when used properly, for the life of the instrument.

**ASTM-like Precision** PerformaTherm™ meets all ASTM standards for accuracy, tolerance and uncertainty. Each instrument is completely manufactured in our ISO/IEC 17025 Accredited Laboratory. The data sheet accompanying this brochure gives full technical specifications for all PerformaTherm™ instruments. PerformaTherm™ thermometers are available in protective blue leatherette cases, both individually and in sets, in either Celsius or Fahrenheit. Each thermometer is supplied with a two page report of calibration including the corrections to the nearest 1/10th scale division, and the NIST traceability, uncertainty and test methods used.
See our separate data sheet for a listing of all PerformaTherm™ instruments.

| | PerformaTherm™ | Mercury | Traditional Spirit |
|---|---|---|---|
| Tolerance | ±0.1° C | ±0.1°C | ±2.0°C |
| Uncertainty | ±0.05°C | ±0.05°C | ±0.5°C |
| Response Time | < 3 min | < 3 min | Up to 15 min |

**Miller & Weber, Inc. developed PerformaTherm™**
Miller & Weber has been setting the standard for quality since 1941. We're the first liquid-in-glass thermometer manufacturer to achieve both ISO-9001 Certification and ISO/IEC 17025 Accreditation. You might be using our thermometers right now and not know it. Look for our logo, as we private label for some of the finest names in the business. In addition, we calibrate and certify thermometers of any make for companies worldwide in our ISO/IEC 17025 Accredited Laboratory.

# PerformaTherm™ Thermometers

Ed Martin & associates, inc.

Made in strict accordance to the ASTM Standard E2251 "Standard Specification for Liquid-In-Glass ASTM Thermometer with Low-Hazard Precision Liquids"

| Catalog Part # | ASTM # | Range | Divisions |
|---|---|---|---|
| T-3950/S5C | S5C | -38/50C | 1 |
| T-3950/S5F | S5F | -36/120F | 2 |
| T-3950/S12C | S12C | -20/102C | .2 |
| T-3950/S12F | S12F | -5/215 | .5 |
| T-3950/S15C | S15C | -2/80C | .2 |
| T-3950/S15F | S15F | 30/180F | .5 |
| T-3950/S18C | S18C | 34/42C | .1 |
| T-3950/S18F | S18F | 94/108F | .2 |
| T-3950/S22C | S22C | 95/103C | .1 |
| T-3950/S22F | S22F | 204/218F | .2 |
| T-3950/S56C | S56C | 19/35C | .02 |
| T-3950/S56F | S56F | 66/95F | .05 |
| T-3950/S58C | S58C | -34/49C | .5 |
| T-3950/S58F | S58F | -30/120F | 1 |
| T-3950/S59C | S59C | -18/82C | .5 |
| T-3950/S59F | S59F | 0/180F | 1 |
| T-3950/S62C | S62C | -38/2C | .1 |
| T-3950/S62F | S62F | -36/35F | .2 |
| T-3950/S63C | S63C | -8/32C | .1 |
| T-3950/S63F | S63F | 18/89F | .2 |
| T-3950/S64C | S64C | 25/55C | .1 |
| T-3950/S64F | S64F | 77/131F | .2 |
| T-3950/S65C | S65C | 50/80C | .1 |
| T-3950/S65F | S65F | 122/176F | .2 |
| T-3950/S66C | S66C | 75/105C | .1 |
| T-3950/S66F | S66F | 167/221F | .2 |
| T-3950/S67C | S67C | 95/155C | .2 |
| T-3950/S67F | S67F | 203/311F | .5 |
| T-3950/S91C | S91C | 20/50C | .1 |
| T-3950/S116C | S116C | 18.9/25.1C | .01 |
| T-3950/S117C | S117C | 23.9/30.1C | .01 |
| T-3950/S120C | S120C | 38.5/41.5C | .05 |
| T-3950/S130C | S130C | -7/110C | .5 |
| T-3950/S130F | S130F | 20/220F | 1 |

# PerformaTherm® Precision Thermometers

Ed Martin & associates, inc.

| Catalog Part # | Stem Immersion | Range | Division | Length |
|---|---|---|---|---|
| T-3900S/S110CT | Total | -20/110C | .5 | 12″ |
| T-3940S/S110CP | 76mm | -20/110C | .5 | 12″ |
| T-3970S/S230FT | Total | 0/230F | 1 | 12″ |
| T-3950S/S230FP | 76mm | 0/230F | 1 | 12″ |
| T-3900/SCT40 | Total | -1/51C | .1 | 18″ |
| T-3920/SCP40 | 76mm | -1/51C | .1 | 18″ |
| T-3925/SFT40 | Total | 30/124F | .2 | 18″ |
| T-3926/SFP40 | 76mm | 30/124F | .2 | 18″ |

# ATSM & Laboratory Hydrometers

Ed Martin & associates, inc.

At Ed Martin & Associates, our hydrometers are produced by manufactures known for quality craftsmanship and accuracy of measurements. Manufactured strictly in accordance with all applicable ASTM specifications, the ASTM hydrometers have become the industry standard for close, accurate readings. All instruments in this series are available with our NIST Traceable certification and as such serve as primary reference standards in many private laboratories.

**ASTM API Gravity Hydrometers**

This grouping of hydrometers is preferred by most users in the petroleum industry as laboratory standards. A separate thermometer, ASTM 12F or 12C, should be used to precisely determine the temperature of the sample to permit correction of observed values to 60F (as per ASTM Method D1298).

All part numbers below can be calibrated at three (3) test points as specified by ASTM by adding "C" to the part number.

| Part # | ASTM | Range | Division | Length |
|---|---|---|---|---|
| 20-1H | 1H | -1/11 | 0.1 | 330 mm |
| 20-2H | 2H | 9/21 | 0.1 | 330 mm |
| 20-3H | 3H | 19/31 | 0.1 | 330 mm |
| 20-4H | 4H | 29/41 | 0.1 | 330 mm |
| 20-5H | 5H | 39/51 | 0.1 | 330 mm |
| 20-6H | 6H | 49/61 | 0.1 | 330 mm |
| 20-7H | 7H | 59/71 | 0.1 | 330 mm |
| 20-8H | 8H | 69/81 | 0.1 | 330 mm |
| 20-9H | 9H | 79/91 | 0.1 | 330 mm |
| 20-10H | 10H | 89/101 | 0.1 | 330 mm |
| 20-11H | 11H | 37/49 | 0.1 | 325 mm |
| 20-12H | 12H | 64/76 | 0.1 | 325 mm |

# ATSM API Thermo-Hydrometers

Ed Martin & associates, inc.

## API HYDROMETER, THERMOMETER IN BODY

These hydrometers are fabricated with a thermometer in the lower body for convenience to the user. For any particular API gravity range, three temperature ranges are available, coded as follows: L= Low 0 to 150F, M=Medium 30 to 180F, H=High 60 to 220F. The units below are designated ASTMs. Variations are available upon request.
Any of the below listed parts can be calibrated a three (3) test points specified by ASTM by adding "C" to the part number.

| Part # | ASTM | Range | Division | Length | Temp Range |
|---|---|---|---|---|---|
| 20-41HL | 41HL | 15/23 | 0.1 | 380mm | 0 to 150F |
| 20-42HL | 42HL | 22/30 | 0.1 | 380mm | 0 to 150F |
| 20-43HL | 43HL | 29/37 | 0.1 | 380 mm | 0 to 150F |
| 20-44HL | 44HL | 36/44 | 0.1 | 380 mm | 0 to 150F |
| 20-45HL | 45HL | 43/51 | 0.1 | 380 mm | 0 to 150F |
| 20-51HL | 51HL | -1/11 | 0.1 | 380 mm | 0 to 150F |
| 20-52HL | 52HL | 9/21 | 0.1 | 380 mm | 0 to 150F |
| 20-53HL | 53HL | 19/31 | 0.1 | 380 mm | 0 to 150F |
| 20-53HM | 53HM | 19/31 | 0.1 | 380mm | 30 to 180F |
| 20-54HL | 54HL | 29/41 | 0.1 | 380 mm | 0 to 150F |
| 20-54HM | 54HM | 29/41 | 0.1 | 380mm | 30 to 180F |
| 20-55HL | 55HL | 39/51 | 0.1 | 380 mm | 0 to 150F |
| 20-56HL | 56HL | 49/61 | 0.1 | 380 mm | 0 to 150F |
| 20-57HL | 57HL | 59/71 | 0.1 | 380 mm | 0 to 150F |
| 20-58HL | 58HL | 69/81 | 0.1 | 380 mm | 0 to 150F |
| 20-59HL | 59HL | 79/91 | 0.1 | 380 mm | 0 to 150F |
| 20-60HL | 60HL | 89/101 | 0.1 | 380 mm | 0 to 150F |

## API HYDROMETER THERMOMETER IN STEM 30 TO 220°F

| Part # | ASTM | Range | Division | Length |
|---|---|---|---|---|
| 20-71H | 71H | -1/11 | 0.1 | 380 mm |
| 20-72H | 72H | 9/21 | 0.1 | 380 mm |
| 20-73H | 73H | 19/31 | 0.1 | 380 mm |
| 20-74H | 74H | 29/41 | 0.1 | 380 mm |
| 20-7108 | | 39/51 | 0.1 | 380 mm |
| 20-7110 | | 49/61 | 0.1 | 380 mm |
| 20-7112 | | 59/71 | 0.1 | 380 mm |

Add "-C" to catalog number for NIST traceable calibration with report.

# ATSM API Gravity Hydrometers Short Form

Ed Martin & associates, inc.

These hydrometers are popular in many applications due to their small size, thus allowing a reading to be obtained from a small amount of product sample (approximately 6 ounces of liquid).
Any of the parts below can be calibrated a three (3) test points as specified by ASTM by adding "C" to the catalog number.

| Catalog # | ASTM | Range | Division | Length |
|---|---|---|---|---|
| 20-21H | 21H | 0/6 | 0.1 | 165mm |
| 20-22H | 22H | 5/11 | 0.1 | 165mm |
| 20-23H | 23H | 10/16 | 0.1 | 165mm |
| 20-24H | 24H | 15/21 | 0.1 | 165mm |
| 20-25H | 25H | 20/26 | 0.1 | 165mm |
| 20-26H | 26H | 25/31 | 0.1 | 165mm |
| 20-27H | 27H | 30/36 | 0.1 | 165mm |
| 20-28H | 28H | 35/41 | 0.1 | 165mm |
| 20-29H | 29H | 40/46 | 0.1 | 165mm |
| 20-30H | 30H | 45/51 | 0.1 | 165mm |
| 20-31H | 31H | 50/56 | 0.1 | 165mm |
| 20-32H | 32H | 55/61 | 0.1 | 165mm |
| 20-33H | 33H | 60/66 | 0.1 | 165mm |
| 20-34H | 34H | 65/71 | 0.1 | 165mm |
| 20-35H | 35H | 70/76 | 0.1 | 165mm |
| 20-36H | 36H | 75/81 | 0.1 | 165mm |
| 20-37H | 37H | 80/86 | 0.1 | 165mm |
| 20-38H | 38H | 85/91 | 0.1 | 165mm |
| 20-39H | 39H | 90/96 | 0.1 | 165mm |
| 20-40H | 40H | 95/101 | 0.1 | 165mm |

# ASTM Specific Gravity Hydrometers

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| Part # | ASTM | Range | Division | Length |
|---|---|---|---|---|
| 20-82H | 82H | .650/.700 | 0.0005° | 330 mm |
| 20-83H | 83H | .700/.750 | 0.0005° | 330 mm |
| 20-84H | 84H | .750/.800 | 0.0005° | 330 mm |
| 20-85H | 85H | .800/.850 | 0.0005° | 330 mm |
| 20-86H | 86H | .850/.900 | 0.0005° | 330 mm |
| 20-87H | 87H | .900/.950 | 0.0005° | 330 mm |
| 20-88H | 88H | .950/1.000 | 0.0005° | 330 mm |
| 20-89H | 89H | 1.000/1.050 | 0.0005° | 330 mm |
| 20-90H | 90H | 1.050/1.100 | 0.0005° | 330 mm |
| 20-102H | 102H | .650/.700 | 0.001 | 260 mm |
| 20-103H | 103H | .700/.750 | 0.001 | 260 mm |
| 20-104H | 104H | .750/.800 | 0.001 | 260 mm |
| 20-105H | 105H | .800/.850 | 0.001 | 260 mm |
| 20-106H | 106H | .850/.900 | 0.001 | 260 mm |
| 20-107H | 107H | .900/.950 | 0.001 | 260 mm |
| 20-108H | 108H | .950/1.000 | 0.001 | 260 mm |
| 20-111H | 111H | 1.000/1.050 | 0.0005 | 330 mm |
| 20-112H | 112H | 1.050/1.100 | 0.0005 | 330 mm |
| 20-113H | 113H | 1.100/1.150 | 0.0005 | 330 mm |
| 20-114H | 114H | 1.150/1.200 | 0.0005 | 330 mm |
| 20-115H | 115H | 1.200/1.250 | 0.0005 | 330 mm |
| 20-116H | 116H | 1.250/1.300 | 0.0005 | 330 mm |
| 20-117H | 117H | 1.300/1.350 | 0.0005 | 330 mm |
| 20-118H | 118H | 1.350/1.400 | 0.0005 | 330 mm |
| 20-119H | 119H | 1.400/1.450 | 0.0005 | 330 mm |
| 20-120H | 120H | 1.450/1.500 | 0.0005 | 330 mm |
| 20-125H | 125H | 1.000/1.050 | 0.001 | 260 mm |
| 20-126H | 126H | 1.050/1.100 | 0.001 | 260 mm |
| 20-127H | 127H | 1.100/1.150 | 0.001 | 260 mm |
| 20-128H | 128H | 1.150/1.200 | 0.001 | 260 mm |
| 20-129H | 129H | 1.200/1.250 | 0.001 | 260 mm |
| 20-130H | 130H | 1.250/1.300 | 0.001 | 260 mm |
| 20-131H | 131H | 1.300/1.350 | 0.001 | 260 mm |
| 20-132H | 132H | 1.350/1.400 | 0.001 | 260 mm |
| 20-133H | 133H | 1.400/1.450 | 0.001 | 260 mm |
| 20-134H | 134H | 1.450/1.500 | 0.001 | 260 mm |
| 20-135H | 135H | 1.500/1.550 | 0.001 | 260 mm |
| 20-136H | 136H | 1.550/1.600 | 0.001 | 260 mm |
| 20-137H | 137H | 1.600/1.650 | 0.001 | 260 mm |
| 20-138H | 138H | 1.650/1.700 | 0.001 | 260 mm |
| 20-139H | 139H | 1.700/1.750 | 0.001 | 260 mm |
| 20-140H | 140H | 1.750/1.800 | 0.001 | 260 mm |
| 20-141H | 141H | 1.800/1.850 | 0.001 | 260 mm |

# Hydrometer Accessories

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## HYDROMETER CASES

| Part # | Descriptions |
|---|---|
| 8962 | Single Hydrometer Case for 15″ Hydros |
| 8964 | Triple Hydrometer Case for 15″ Hydros |
| 8966 | Nine (9) place Felt lined hydrometer holder |
| 8990 | Nine place Hydrometer Holder for 15″-18″ hydrometers |

## HYDROMETER JARS

| Part # | Description |
|---|---|
| F1-10 | Hydro Jar 2″x15″ 50X 375MM |
| F1-10P | Plastic Jar 2″x15″ No pour spout |
| F1-10PS | Plastic Jar 1 3/8″x15″ |
| F1038375 | Hydro Jar 38 x 375MM |
| F1050375 | Hydro Jar 50 x 375MM |
| F450100 | Hydro Jar Graduated Cylinder 100ML |
| F4501000 | Hydro Jar Graduated Cylinder 1000ML |
| F450500 | Hydro Jar Graduated Cylinder 500ML |

# Mercury Free Precision API Thermo-Hydrometers

Ed Martin & associates, inc.

**Environmentally Safe, Non-Toxic**
**Precision Thermo-Hydrometers**

# Combined Form API Hydrometers Non-Mercury

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The following hydrometers temperature range can be 0/150, 30/180 or 60/220 Thermometer in body

| Part # | API Range | Div | Temp Range | Div | Length |
|---|---|---|---|---|---|
| SA-902 | 10/45 | 0.5 | 0/150 | 2 | 380mm |
| SA-903 | 45/90 | 0.5 | 0/150 | 2 | 380mm |
| SA-904 | 10/30 | 0.2 | 0/150 | 2 | 380mm |
| SA-905 | 20/40 | 0.2 | 0/150 | 2 | 380mm |
| SA-906 | 30/50 | 0.2 | 0/150 | 2 | 380mm |
| SA-907 | 40/60 | 0.2 | 0/150 | 2 | 380mm |
| SA-908 | 50/70 | 0.2 | 0/150 | 2 | 380mm |
| SA-909 | 60/80 | 0.2 | 0/150 | 2 | 380mm |
| SA-910 | 70/90 | 0.2 | 0/150 | 2 | 380mm |
| SA-911 | 80/100 | 0.2 | 0/150 | 2 | 380mm |
| SA-912 | -1/11 | 0.1 | 0/150 | 2 | 380mm |
| SA-913 | 9/21 | 0.1 | 0/150 | 2 | 380mm |
| SA-914 | 19/31 | 0.1 | 0/150 | 2 | 380mm |
| SA-915 | 29/41 | 0.1 | 0/150 | 2 | 380mm |
| SA-916 | 39/51 | 0.1 | 0/150 | 2 | 380mm |
| SA-917 | 49/61 | 0.1 | 0/150 | 2 | 380mm |
| SA-918 | 59/71 | 0.1 | 0/150 | 2 | 380mm |
| SA-919 | 69/81 | 0.1 | 0/150 | 2 | 380mm |
| SA-920 | 79/91 | 0.1 | 0/150 | 2 | 380mm |
| SA-921 | 89/101 | 0.1 | 0/150 | 2 | 380mm |
| SA-972 | 10/40 | 0.2 | 0/150 | 2 | 380mm |
| SA-973 | 29/45 | 0.1 | 0/150 | 2 | 380mm |
| SA-974 | 30/60 | 0.2 | 0/150 | 2 | 380mm |
| SA-975 | 50/80 | 0.2 | 0/150 | 2 | 380mm |
| SA-976 | 80/110 | 0.2 | 0/150 | 2 | 380mm |

The following hydrometers have In-Stem thermometers only one temp range available

| Part # | API Range | Div | Temp Range | Div | Length |
|---|---|---|---|---|---|
| SA-912ST | -1/11 | 0.1 | 30/220 | 2 | 380mm |
| SA-913ST | 9/21 | 0.1 | 30/220 | 2 | 380mm |
| SA-914ST | 19/31 | 0.1 | 30/220 | 2 | 380mm |
| SA-915ST | 29/41 | 0.1 | 30/220 | 2 | 380mm |

# Combined Form API Hydrometers Non-Mercury

Ed Martin & associates, inc.

The following hydrometers have Thermometer in body only one temp range available

| Part # | API Range | Div | Temp Range | Div | Length |
|---|---|---|---|---|---|
| SA-930 | 10/45 | 0.1 | 20/130 | 2 | 190mm |
| SA-940 | -1/11 | 0.2 | 20/130 | 2 | 190mm |
| SA-941 | 9/21 | 0.2 | 20/130 | 2 | 190mm |
| SA-942 | 19/31 | 0.2 | 20/130 | 2 | 190mm |
| SA-943 | 29/41 | 0.2 | 20/130 | 2 | 190mm |
| SA-944 | 39/51 | 0.2 | 20/130 | 2 | 190mm |
| SA-945 | 49/61 | 0.2 | 20/130 | 2 | 190mm |
| SA-946 | 59/71 | 0.2 | 20/130 | 2 | 190mm |
| SA-947 | 69/81 | 0.2 | 20/130 | 2 | 190mm |
| SA-948 | 79/91 | 0.2 | 20/130 | 2 | 190mm |

# Calibration and Repair

Ed Martin & associates, inc.

## THERMOPROBE REPAIR AND CALIBRATION

Ed Martin and Associates, Inc. is a factory authorized representative for parts, service and calibration of all models for ThermoProbe. We maintain stock of all parts and repair and re-calibrate (with N.I.S.T. traceable certificates) quickly, professionally and at a competitive price.

- Qualified factory trained technicians
- N.I.S.T. Traceability for temperature calibration
- Itemized repair cost for repair estimates
- Fast turnaround for repairs and calibration

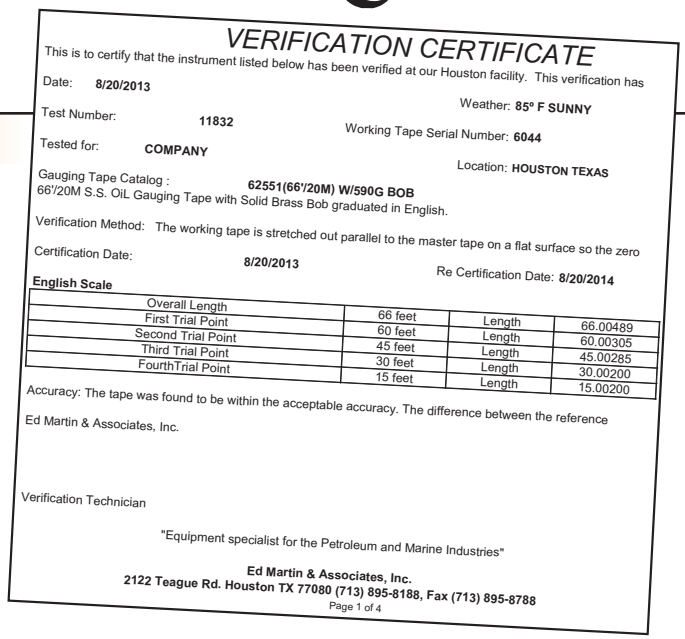
## MMC CALIBRATION AND REPAIR

- Ed Martin and Associates, Inc. offers a complete repair department for MMC closed and restricted gauging systems.
- Our technician is factory trained and we offer a complete line of manufacturer replacement parts. This service includes complete diagnostics of your equipment to insure manufacturer specifications.
- In addition to our repair department we offer Calibration services for temperature and Verification of measurement on the UTI equipment.
- All calibration and verification services are traceable to NIST certified thermometers and gauging tapes.

# Verification & Calibration

Ed Martin & associates, inc.

## MEASUREMENT VERIFICATION



VERIFICATION CERTIFICATE

This is to certify that the instrument listed below has been verified at our Houston facility. This verification has

Date: **8/20/2013**

Weather: **85° F SUNNY**

Test Number: **11832**

Working Tape Serial Number: **6044**

Tested for: **COMPANY**

Location: **HOUSTON TEXAS**

Gauging Tape Catalog : **62551(66'/20M) W/590G BOB**

66'/20M S.S. OiL Gauging Tape with Solid Brass Bob graduated in English.

Verification Method: The working tape is stretched out parallel to the master tape on a flat surface so the zero

Certification Date: **8/20/2013**

Re Certification Date: **8/20/2014**

**English Scale**

| | | | |
|---|---|---|---|
| Overall Length | | | |
| First Trial Point | 66 feet | Length | 66.00489 |
| Second Trial Point | 60 feet | Length | 60.00305 |
| Third Trial Point | 45 feet | Length | 45.00285 |
| FourthTrial Point | 30 feet | Length | 30.00200 |
| | 15 feet | Length | 15.00200 |

Accuracy: The tape was found to be within the acceptable accuracy. The difference between the reference

Ed Martin & Associates, Inc.

Verification Technician

"Equipment specialist for the Petroleum and Marine Industries"

**Ed Martin & Associates, Inc.**
**2122 Teague Rd. Houston TX 77080 (713) 895-8188, Fax (713) 895-8788**
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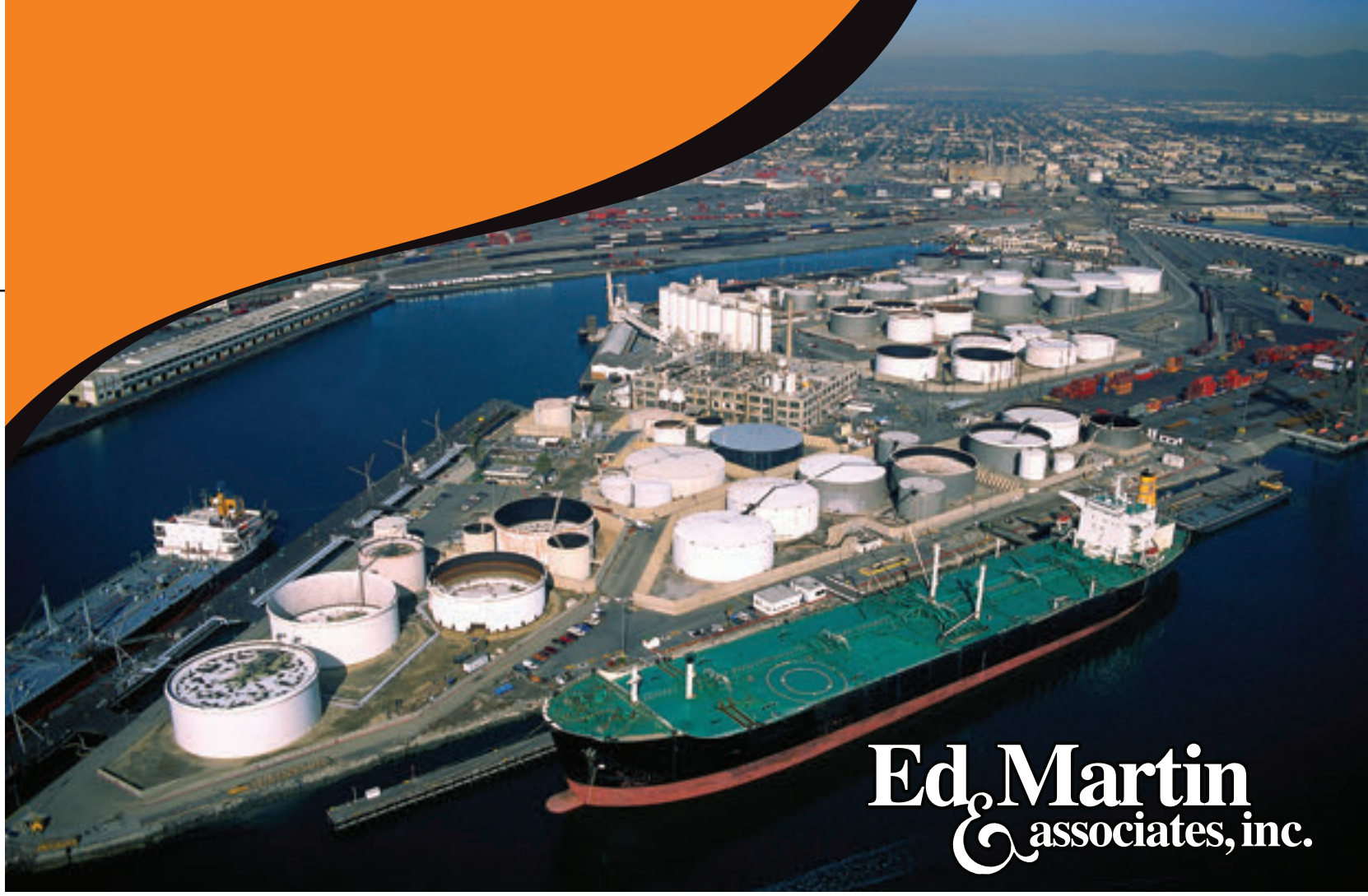
Due to accuracy traceability requirements mandated by internal quality standards or ISO 9001procedures, Ed Martin & Associates, Inc. is pleased to offer the service of tape verification.

- According to Appendix A from Manual Petroleum Measurement Standards Chapter 3 Tank Gauging, Section 1A, Standard Practice for the Manual Gauging of Petroleum and Petroleum Products:
- The working tape and bob attached should be checked for accuracy when new and at least annually thereafter by comparison with a master tape that has been certified by or is traceable to the National Institute of Standards and Technology (NIST).
- The verification is performed against a National Institute of Standards and Technology certified master gauging tape and plumb bob. The tapes are verified using the API Chapter 3 procedures.
- We can also provide this service on tapes and bobs that have been purchased or verified at an earlier date.
- The Verification Certificate includes a copy of the observation sheet

## TEMPERATURE CALIBRATION

To meet the growing demand for the required use of instruments calibrated and traceable to N.I.S.T., Ed Martin and Associates, Inc. has associated with laboratories that provide state-of-the-art laboratory services with full time, highly qualified, trained personnel. The laboratories are both ISO 9001:2000 Certified and ISO17025 accredited.

- The Reports of Calibration issued are traceable to N.I.S.T. and show corrections to be applied to the smallest scale division of the instrument. All test temperatures are carefully attained using microprocessor controlled equipment.
- The laboratories can calibrate all thermometer types – ASTM and other glass thermometers, digital thermometers, chart recorders, bimetal thermometers, autoclave thermometers, PRTs, Thermistors, Thermocouples, surface thermometers, and many more.




In addition to the products and services offered within this catalog, we are pleased to work directly with the following companies to meet all of your gauging and measurement needs.

**Koehler Instrument Company - www.koehlerinstrument.com - Petroleum Testing Equipment**

**Reotemp Instrument Corporation - www.reotemp.com - Bimetal thermometers, Pressure gauges, Diaphragm seals**

**Temtex Temperature Systems Inc. - http://temtex.net - Thermocouple probes and Thermowells**

**R3 Safety – Safety & P.P.E Products**

Please call us to request a catalog from these companies.

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**Terms** – Credit terms are available to qualified businesses. We also accept MasterCard, Visa and American Express credit cards and bank wire transfers.

**Prompt Shipments** – Our comprehensive stock allow us to quickly ship your order. If you have an urgent or unusual need, please notify us and we will do everything we can to get what you need shipped in the quickest amount of time.

**Returns** – Returns of equipment will be allowed within 30 days from the date of purchase (goods must be in resalable condition). Prior permission to return an item must be received from a representative of our company. Returned items may be subject to a restocking charge. "Made to Order" items may not be returned for credit.

**Shipping** – We will route shipments as specified on the order. In the absence of specific instructions, we will send packages by United Parcel Service (UPS). Unless otherwise specified, packages will be insured and any additional cost will be added to the invoice along with the other shipping costs.

**Breakage and Shortages** – In the case of visible or concealed damage, please notify us so that a claim may be filed. Please hold the damaged goods, packing material and all cartons for inspection by the carrier. In case of shortage, please be sure that nothing was thrown away with the packing material and that all the cartons were delivered. Please do not return damaged merchandise without prior authorization.

# Ed Martin & associates, inc.

2122 Teague Rd
Houston, Texas 77080
713.895.8188
Fax 713.895.8788
www.emaa.com